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A.M.A. CONVENTION • KANSAS CITY, MO. • MAY 11-15, 1936

CURTIS' OBSTETRICS & GYNECOLOGY

THE immediate and constantly increasing success of this fine work is due primarily to the thoroughly complete way in which it deals with those important and frequent diseases and conditions that come daily into the office of the family physician, surgeon, and specialist alike. It is well known that at least 50 per cent of general practice has to do with those diseases embraced within the life-cycle of Woman.

Dr. Arthur Hale Curtis of Northwestern University has brought together 80 outstanding practicing specialists to write this work for you. They have done an unusually fine piece of work. They have set down here what they themselves have found from large experience. They give you what they themselves are doing in actual practice. They give you both medical and surgical treatments. They give you a work that covers female diseases thoroughly—from conception and delivery to aftercare; from minor gynecologic conditions to those requiring major operation. They give you details—details of diagnosis, details of management, details of operative technic.

But that is not all: These practical authors have included a discussion of the gynecologic angle of diseases *not* peculiarly gynecologic, such as urinary diseases, appendicitis, intestinal derangements, neuropsychiatric problems, etc.

Then to add maximum value to the work, they have included 2150 superb illustrations on 1674 figures, many of them in colors.

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FUNCTIONAL NEUROSES AS COMPLICATIONS OF ORGANIC DISEASE

AN "OFFICE" TECHNIC OF APPROACH, WITH SPECIAL REFERENCE TO THE NEURODERMATOSES

JOHN H. STOKES, M.D.
PHILADELPHIA

For the past fifteen years a special interest in the functional neuroses and in behavior problems has led me to develop, from a variety of sources, a technic of "office" analysis and treatment of this now recognized element among the many causes of cutaneous disease. A sufficient number of patients have considered this feature of the management of their cases at my hands as an important element in their permanent recovery or satisfactory adjustment to encourage me to present the mode of approach for trial in cases in which circumstances do not permit or justify the calling of a neuropsychiatric consultation and special or sanatorium treatment. With apologies, under the pressure of condensation, a highly didactic form is used, without citation of case illustrations or discussion of percentage results.

DERMATOSES

The dermatoses to which the technic is applicable include neurodermitis in the broad sense and special forms of this disturbance, such as cervical erythema and acute exudative neurodermitis, flexural neurodermitis, prurigo of Besnier, the cutaneous phase of the eczema-asthma-hay fever complex and extensive lichen simplex chronicus; chronic urticaria; the rosacea complex; "neurogenous" pruritus; cutaneous infections showing a close relation to the sweat-vascular mechanism, such as "dyshidrotic" eruptions of the hands and feet, and the mycotic-pyogenic-allergic syndromes, such as the "levurids" and "eczematids" and the psoriasiform parakeratosis of Brocq. The principles outlined are applicable also to the neurogenous phase of asthma and to the neurogenous aspect of the allergic background in general and to dermatoses complicated by excoriative injury.

THE PERSONALITY TYPES INCLUDED

It is not intended that the method here presented shall apply to the pronounced grades of warping of the personality amounting to actual hysteria or the recognized psychoses, as an office procedure for patients with neurasthenic and psychasthenic collapse, for malingerers, or for patients with severe grades of conduct disorder demanding the use of the full psychoanalytic procedure. This is essentially a plan of assisting the patient who is "up and around" to recognize and correct the functional nervous background of his dermatosis. The nervous states susceptible of benefit by this form of management are the so-called vagus-sympathetic imbalance, especially "vagotonia"; neurocirculatory instability of Becker; the "tension frame of mind" of my own writings, and the simpler personality disturbances, including elementary sex problems, exclusive of homosexuality and actual perversions, such as sadism or masochism; the commoner maladjustments of the personal life under the strain of domestic load and incompatibility, finance, relatives-in-law, employment and the like, and anxieties, simple phobias, fixations, repressions and exhaustion.

RECOGNITION OF THE NEUROGENOUS SUBSTRATE; ESTIMATION OF THE PERSONALITY

The following steps and earmarks are employed in recognizing the type of patient and of situation in which the subsequently described methods are applicable. Some experience with the etiologic analysis of urticaria and the rosacea complex has led to the belief that the type of personality rather than the adventitious circumstances is the essential factor underlying the cutaneous outbreak. The isolated circumstance merely pulls the trigger, so to speak. The discharge comes from the gun and its load. Hence, first, an estimation of the personality is necessary. This requires the taking of a routine history of the hereditary elements; not alone of insanity, neuroticism and breakdown, irritability and eccentricity, though these are essential, but also of allergic trends, urticaria, the eczema-asthma-hay fever complex, vasomotor reactivity, migraine and hyperthyroidism, which are all closely related phenomena. An understanding of the personality background of the family and relations is at times a necessity. Occupation or occupational predisposition furnishes clues to the personality make-up, as for example in the trend toward excessive altruism seen in members of the medical, teaching ("a hereditary neurosis"—Plummer), nursing and social service professions; the identification of trouble bearers and responsibility hounds, the dray horses of their families and communities, and those engaged in or yearning toward highly competitive careers with marked "spotlight" leanings, such as literature, drama and public speaking (das liebe Ich). Achievement also requires early appraisal for its outlet value, the completeness with which it satisfies or the degree to which it has overrewarded or overstimulated the personality trend. Leaders, drivers, tyrants and hypereffectives in general explode into the cutaneous neurogenous field under stress, excess or frustration. Stability, reactivity and stamina must be estimated by the history of ability or inability of the whole personality and of the individual organic systems, such as the

From the Department of Dermatology and Syphilology, University of Pennsylvania School of Medicine.

Read before the Section on Dermatology and Syphilology at the Eighty-Sixth Annual Session of the American Medical Association, Atlantic City, N. J., June 12, 1935.

gastro-intestinal tract, to perform continuously and effectively under load. The patient whose eyes give out, whose stomach fails him, who has an "American bowel" (mucous colitis) falls within this field quite as much as the chronic changer of occupation or the too persistent essayer of one goal. Becker insists that an inborn inadequacy akin to the probable basis of neurocirculatory asthenia underlies the collapse of the neurovascular mechanism in the skin of many of these patients. They are the subjects of a perpetual disposition to exceed the speed which their chassis will permit without rattling to pieces. For the appraisal of these elements, two sessions may be required.

THE RECOGNITION OF TENSION

As far as the identification of something with a large intuitive element can be reduced to words, the estimation of the tension of the individual involves these elements. One must learn early to differentiate the open and the closed types (not necessarily extrovert and introvert), the former in a constant tremulous flutter, the latter seen from behind a mask, darkly—the "poker face" of American parlance. An early opportunity should be taken to appraise the neuromuscular state by carefully but unobtrusively observing the posture, movement and enunciation. Almost perfect imitations of relaxation in pose may be observed in the closed or repressed type, but the intent gaze and occasional betraying diaphragmatic sigh as an unconscious release may disclose the internal tension. The mobile or open type is easily recognized by the fidgets, constant movement and jerkiness of action and enunciation, but it may be necessary to have the less obvious type of patient lie on the examining table to observe the elevation of the chin, the thrown-back tendency and rigidity of the neck, the tense abdominal wall, the arched lumbar spine and the thrust-out feet. I have even had reason to suspect the unwillingness of a woman to lay both buttocks on the table as suggesting a sex substrate or repressive trend. The clipping enunciation and heightened tone of voice of the vagotonic type and the jerk that he gives to his shoes and shoestrings are evidences of the high output of central energy that is constantly bombarding his peripheral structure, so to speak. The facies is a material aid in estimating tensions. The veil of impassiveness of the closed type may be lifted by the eyes, which have an intentness, a dark reserve or a birdlike alertness combined with impenetrability. The open type of patient blinks, shies, suffuses, or simply looks about. Unwinking eyes may express an excessive internal pressure under excessive control, while "blinkers" have at least discharge, but not release of tension or relaxation. The eyebrows and forehead are of interest; the brows lifted toward the hairline mean anxious concern—either the situation has overwhelmed the patient or he fears that it will. This is a totally different state of tension from that of frowning preoccupation, in which the patient still feels himself in command of the problem. The behavior of the small muscles about the lips and chin is a very sensitive index of inward tension, and the twisting lip, the wry smile, the tremor, lip licking and biting and the tremulous or puckered chin under questioning should be closely watched.

I have thought that the characteristics of sleep or sleeplessness assisted materially in gaining insight into the nervous state. The late retiring hour of the person too tired to make the effort to undress, who simply goes on and on and on; the patient who lies awake after going to bed, a victim of too much thought and too little exercise; the insomnia of the small hours, due to worry and characterized by the revolving wheel or cycle of recurring small problems or minor crises and vexations overlying either hunger or some great unrecognized lack or strain; the early rising of the sex hungry with its burst of morning walking or calisthenics. The respiration of patients should be watched not only for rate and depth but also for the characteristic instinctive release of diaphragmatic tension already mentioned—the full breath and sigh interpolated into a period of sitting inactivity. The reactions of patients in all these particulars should be watched during routine questioning as well as during the "cathartic" approach to be described. Often a verbal description of the sensation of being wound up at the back of the neck and of carrying the diaphragm high in the chest brings an instant confirmatory reply from the patient, who thereupon, recognizing your comprehension of his state, proceeds to "open up." Finally, a sixth sense, gained by experience, must be brought to bear on these patients, an instinct which, after about so long a period of failure to reach a result by attention to the ordinary medical considerations, tracks directly toward a sensed psychogenous factor and by an intuitive touch directs the shaft of a question straight at the heart of the matter.

APPRAISAL OF THE VASOMOTOR STATUS

The come and go of color, the flushing of the dermatologically involved area under observation and stress of waiting, questioning or examination; the bluing of the hands and feet in a dependent position or when the circulation is at all impeded, as on sitting over an edge (table, toilet seat or bathtub edge), the striking blanching of the flushed hand on elevation, the occurrence of acroparesthesias and the prickling of "going to sleep" when the arms are raised above the shoulder level in bed, "dead finger," the vasomotor blanching of one or more fingers without apparent cause, the flushing of the rosacea area are all useful indexes of the reduction of vasomotor tone, resilience and response that accompanies prolonged stress and seems at times to have a relation to the state of the intestinal tract, perhaps with respect to histamine or acetylcholine-forming flora. In this connection patients will often notice that their shoes or wrist watch straps have become tight even before the circulatory stasis becomes visible as a result of a change in color. Dermographism should always be tested but will vary from the pale strich to wheal formation without necessary correlation with a mental state. Vagotonic persons show preponderantly marked red dermographism, however.

THE SWEAT MECHANISM

Anomalies of sweating are not usually recognized as having specific application to the state of mind, though Brill [1] mentions the views of Schwenkenbecher and Spitta. I have, however, seen enough examples of palmar hyperhidrosis associated solely with the meeting of strangers, with sex neuroses and with office visits or school examinations to recognize the profusely sweating palm as a warning sign of a neurogenous substrate. To a lesser degree this applies to axillary, vulvar and scrotal sweating as well as to the sweating of the elbow flexure observed in neurodermitic patients under stress. The whole problem of flexural, palmar

1. Brill, E.: Die experimentellen und klinischen Grundlagen zum neuropathischen Typ des Ekzems, Arch. f. Dermat. u. Syph. **150**: 580, 1926.

and plantar sweating as a functional neurosis providing part of the background, together with vasomotor changes, for the cutaneous mycoses, surely deserves the most serious study.

THE GASTRO-INTESTINAL SYMPTOMATOLOGY

In cases of neurocutaneous functional disease the symptoms tend to follow the hypochlorhydric rather than the hyperchlorhydric pattern. The physiologic decline, so to speak, of hydrochloric acid secretion in later years, the nervous irritability associated with accumulated load and stress and the depressant effects of chronic worry and shock on the gastro-intestinal secretion all tend to make the patient with a cutaneous accompaniment of a functional neurosis the victim of (1) pain due to spasm; (2) spastic constipation, often alternating with periods of diarrhea or fermentative reaction due to a relatively undefended intestinal tract; (3) aerophagia with eructation of relatively nonacid material; (4) flatulence associated with a gas-producing flora of the Welch and Bacillus mucosus types, encouraged theoretically by a high intestinal p_H; (5) low blood pressure, flushing of the face, depression and peripheral vasodilatation, as parts perhaps of a histamine and acetylcholine absorption syndrome, and (6) a tendency to urticarial and other ingestion allergic manifestations from abnormal split product absorption secondary to the deficiency of hydrochloric acid and a tendency to chronic low grade gastro-enteritis. This semicharacteristic symptomatology should be elicited by much more detailed questioning than is usually employed, and a mere test meal is no substitute for such an inquiry. The correction of the underlying neurosis as well as of the physiologic changes is a necessity for lasting therapeutic results.

TREATMENT OF THE NEUROGENOUS FACTOR; RAPPORT

The establishing of a proper but not excessive or relaxed degree of intimacy with the patient is the first and a generally familiar essential to command of the psychoneurogenous situation. Contrary to a common impression, physical surroundings need not be—in fact should not be—too impressive. Intellectual and professional prestige is more useful; even the psychotherapy of warts was said to be more effective in Bloch's hands as professor than in those of physically more impressive associates. Age is only superficially important at the outset, but there can be no substitute for an extended and well digested life experience. Without it, it seems to me, psychiatric effort tends to be directed by the head without the heart, a skeleton science of mind without flesh of human nature. The degree with which the examiner shares himself and his own life experience with the patient varies from case to case and should not be overdone. Resort to the third person and the citation of parallel cases may give the necessary detachment, but at critical moments the confessor who is not too afflicted with the self-confessional impulse will know by instinct how to make the patient understand that his physician knows, too, and not from books. De Schweinitz has very skilfully brought out this sharing aspect of the constructive act of helping a person out of trouble. I am satisfied that there are occasions when no degree of serene detachment takes the place of an ability to make the patient feel, even though by indirection, that his guide has personal knowledge of the trouble he is seeking to adjust. As physical surroundings for the examination, almost anything will be usable by the expert, and even the interruptions of an office staff serve a purpose in reminding all concerned that time flies and that the examiner is in demand. On the other hand, complete relaxation on the part of the examiner during the conversation is absolutely essential. His grasp of the situation vanishes the moment the patient senses that his new friend is in a hurry, troubled, preoccupied, tense, rushed or disturbed. Even the informal attitudes of the examiner, stretched out in his chair, hands in hair or draped over some convenient standing object, may open a whole path of investigation in some cases; while a little more form, but never pose, is useful in others. Finally, a sense on the part of the patient that he has been completely examined is essential. It is difficult as well as unwise to impress the claim of the mind until the body has had its due.

Stripped examination provides the often invaluable posture relation of the patient lying on the examining table, helpless and disrobed but covered, in imitation of the bedside tradition, while the physician in office regalia performs both his medical and his priestly function. Twilight, quiet and a fixation equipment of sounds and lights are not called for in the technic I have employed. The estimation of the case and a certain matter-of-factness in the approach, devoid of mystical trappings, have seemed sometimes to be better secured in the purely technically equipped dermatologic examining and treatment room than in the carpeted, book and diploma lined office. Perhaps the surprise with which the patient finds his spiritual troubles being taken into account in the midst of desiccating machinery, x-ray tubes and lamps has a shock therapy value in breaking down his reserve. A good light too is necessary for an accurate appraisal of the mental as well as the physical status.

Commoner Nervous Factors

	Urticaria, 100 Cases	Rosacea, 81 Cases	Controls, Acne, Psoriasis, 100 Cases
High tension ("tension frame of mind")	41	..	13
Overwork, excessive mental exertion, being driven, late hours	33	25	2
Neuroticism (neurasthenias, breakdowns, hypochondria, tics and the like)	24	15	2
Chronic worry	19	43	4
Insomnia	..	15	..
Family trouble	13	14	4
Shock	13	2	1
Financial worries, bad business conditions	11	5	3
Emotional stress	8	..	..
Marked repressions and inferiorities	3	4	1

CATHARSIS AND THE CONFESSIONAL APPROACH

After the identification of a neuropsychogenous substrate has been accomplished in one or several inspections and interviews, an effort may be made to relieve the patient of his load. This does not necessarily call for a forced confessional or even for a directly answered question. An understanding glance of the eye and a hint may be quite enough to open the way for therapeutic suggestion. Getting the patient to talk, while tempting as an evidence of one's gift and flattering to one's ego, is often followed by a reaction against the whole situation and a sense of shame on the part of the patient, which ends one's usefulness in the case. Extended confession is a morbid desire in some patients

and a needless time consumer in others. Studies of the rosacea [2] and urticarial [3] complexes have suggested a pattern of common factors as a guide to intuition in psychoneurogenous cases, which with the relative weights of the items is given in the accompanying table.

The direct question is often necessary and must be made matter of fact on sex matters, relatives-in-law, finance, defeat, antagonisms, conflicts and fears, among which last "marriageability," the threat or approach of old age and domination by another or by a situation (the Watsonian basic fear of being bound or helpless?) seem quite as common as fear of illness, incapacity or death. I have also found useful, as a species of outline both for questioning and for describing to the patient his own plight, the following insight leads along which the troubles that underlie cutaneous explosions seem to concentrate:

THE COMMON INSIGHT LEADS:

What to Look for in the Patient's State of Mind

1. The sense of "must" or obligation; the unending stretch of things ahead that simply have to be done.
2. The impasse or "insoluble" problem; most often somebody who won't die.
3. The conflict of duty and desire. Often it is the family "midchannel."
4. The sense of absolute contradiction—the impossible has happened, water has run uphill, the dykes have failed, our trust is betrayed—the beginning of the buried complex and hysteria.
5. The last straw: "I stood it until that."
6. "Defeatism"—the mental attitude of "it can't be done;" sometimes a combination of constipation and exhaustion.
7. Self pity.
8. The "might have been." The backward looker.
9. The sense of futility and uselessness, of being no longer needed, of being set aside, superseded, passé; especially important in persons over 50, mothers of families with grown children, men who have "retired" without cultural resource.
10. The reaction to domination. This is the "electric relation" between the prurigo or diathetic eczema personality and the antagonistic parent, teacher or relative.
11. Fear, fixation (the blaming of the body for a mental pain), inferiority, repression and defense. These are the psychiatric grenzgebiete.

By direct question, by skilful inference, but always with a certain shrewdness, one may with these guides feel oneself into the depths of a personality with a surprising degree of success. It is important not to make too many misses, a tendency to which is the commonest result of hurry or pressure and of failure to consider the history and personality "front" of the patient carefully in its entirety before attempting to open the door.

REASSURANCE AND READJUSTMENT

Having formed by the foregoing methods a picture of the patient's problems and of his spontaneous reaction to them, one is wise first of all to resist the desire to give direct personal advice or to enter into a discussion of specific courses of action, especially those that are past. The position of detachment, which is after all the controlling one here and which it is wished the patient himself should attain, is not favored by a rostrum delivery of advice. To overcome this tendency, to broaden the base and to impersonalize the myopic egocentricity of the patient's outlook, I have found it worth while to present to him, perhaps better to remind him, somewhat in the manner of the Greek chorus chanting the flow of life from the wings, of some further general principles which he can use in relieving the tension and conflict within him. Not necessarily in the order of their exposition in the particular case, the patient is to be told or reminded:

1. Of the assurance of recovery, optimistically but not unqualifiedly presented.
2. Of the remarkable self-righting power of the mind and of the mechanism of mental recovery by bringing the problem to the surface and naming it, frankly and straightforwardly. Several sessions may be needed to teach him this "fishing and labeling" process.
3. Of his right to a legitimate self confidence and self esteem. "Never blame unless you also praise."
4. Of the influence of the "stream of consciousness," the self-conducted mental commentary that, for good or ill, gathers our rills of thought into the river of personality. "What you call a thing, it is—what you let your mind say about it, you do."
5. Of the resolving power of time. No lesson is harder to learn, but none more salutary than that all things, and above all peace, come to those who know how to wait.
6. Of getting around what one cannot get through or over; some suggestions for a technic of evasion or sidestepping.
7. Of the serenity of the mature. "Not as good, or as evil, but as life." Hyperreaction is childish.
8. Of the value of detachment and the power of noninterference—especially important to impress on the overzealous parent confronted by the rebellious child.
9. That "It won't last—nothing does"—an impression of the mutability and transience even of the worst.
10. Of the vice of continuous effort even in a good cause and the exhaustion that comes to the perpetual striver who never grants a moratorium to himself or others or indulges in purposeful uselessness, masterly inactivity or conscientious laziness.
11. That he is not alone—a need of human beings voiced in the range of expressions from "Misery loves company" and the "Somebody cares" of the relief campaigns to the unforgettable "Not a sparrow falleth . . ."
12. Of the relief of large thoughts—a looking out over the universe, a hilltop perspective. In this form of impersonalization a planetarium, a volume of popular astronomy and an opera glass may be life saving.
13. What to do about solitude, isolation and companionship.
14. What to do about a change of scene.
15. What to do about drugs.
16. What to do about rest.

It must be evident that a purely homiletic delivery of these parcels of worldly wisdom and spiritual admonition may deservedly fall flat. None the less, it is remarkable how a sorely pressed and battered individuality rallies at the sound of some seemingly commonplace slogan uttered by his physician or moves forward behind some more stirring, white-plumed symbolic thought. One is often astonished at the regained self possession, lessened pruritus and decreased vasomotor irritability that follow a single session based on stereotyped patterns such as these. The problems involved in solitude and isolation, companionship and change of scene are, contrary to common conception, highly individual. In general, solitude builds the stronger and sounder recoveries but is the harder medicine to take. Change of scene is invoked too much in a routine way but is life saving for major troubles in strong personalities. I am a determined opponent, within my field of observation, of the too ready resort to sedative drugs, except atropine and calcium. The problem of rest is so important as to absorb the remainder of this paper.

2. Stokes, J. H., and Beerman, Herman: Effect on the Skin of Emotional and Nervous States: IV. The Rosacea Complex: A Reappraisal, with Special Reference to the Constitutional Background and the Rationale of Treatment, Arch. Dermat. & Syph. **26**: 478-494 (Sept.) 1932.

3. Stokes, J. H.; Kulchar, G. V., and Pillsbury, D. M.: Effects on the Skin of Emotional and Nervous States: V. Etiologic Background of Urticaria, with Special Reference to the Psychoneurogenous Factor, Arch. Dermat. & Syph. **31**: 470-498 (April) 1935.

A TECHNIC FOR REST: THE SIX-POINT ATTACK

It is understood that this paper is concerned with those who must keep going; it describes an office, not a sanatorium, approach, though perhaps applicable in "rest house" conditions too. As I present it to the patient, the method revolves about six principles, as follows:

1. A temporary repudiation of responsibility and a defense against overload obtained by one or all of four methods:

(*a*) The adopting of a DGAD (don't-give-a-damn) attitude. To those who find this way of phrasing it unpalatable, other angles or alternatives may be offered, ranging from "Let the other fellow do the worrying," and the conscious shifting of the burden of the seemingly unadjustable on to the shoulders of the Infinite, as in the "Divine Mind" of certain religious groups. The release of some forms of prayer may be a proper variant on this mode of tension reduction, the upper end of the spectrum of *Fiat lux*, so to speak.

(*b*) The sloganization of the casual and the ephemeral as opposed to the enduring and purposeful, a temporary fatalism expressed in the phrase "A hundred years, ten years from now, what will this matter?"

(*c*) An attack on the procession of "musts" by an outright resigning from blocks of obligations and the temporary repudiation of others. Only the completely egocentric person suffers from the delusion that his world cannot go on without him.

(*d*) An attack on "destinationism," the worship of the goal and disregard of the method, the excess purposefulness, usually competitive and designed to beat the other fellow, which marks the pillar and victim of our American type of civilization. This is the distinctive inability to play for the sake of the game instead of the victory that mars our sport and makes our virulently score-counting golfer quite as much as our business man an object of pity rather than respect.

2. A discipline in objective self analysis by the deliberate division of the personality into overmind and undermind. This is sloganized as the "Big and Little Mary" device, in which the wiser oversoul talks soothingly and illuminatingly to Little Mary, the perverse and mischievous sprite whose rebellions, leapings and gyrations keep the personality in a state of turmoil.

3. A reeducation in impersonal detachment by an attack on das liebe Ich, the "Beloved I" of the competitive, egocentric, striving, achieving personality, which cannot bear defeat or brook second place. The sense of the personal unjustness of life and fate is an often unrecognized phase of this personality trend.

4. A technic of neuromuscular tension detection and release. Even so-called rest in bed may fail to provide it unless special instruction is given.

5. A technic of neuromuscular tension discharge. This is the objective of occupational therapy broadly conceived.

6. Invocation of the sense of the ridiculous. Like love and hate, anger and laughter are the obverse and reverse of the same discharge pattern, so to speak. The conception is valuable in detoxifying chronic or recurring as well as acute exasperations. It acts, as has been said, through the sense of the ludicrous, which even a hard-pressed personality is slow to lose. "Smile, damn you, smile.",

The aggregate effect of bringing several of these conceptions to bear on the patient's problem is to put a disturbed personality to rest; and I believe that, valuable though physical or bed rest when ordered may be, its usefulness is often defeated by insufficient attention to the detail of mental and nervous rest. My earlier experience with hospitalization and the later need for producing the same results under ambulatory and office conditions in patients who positively could not without financial and personal disaster seek their beds or submit to a full neuropsychiatric procedure have convinced me not only of the very fair proportion of effectiveness but also of the positive advantages of this approach in the dermatoneuroses. The patient recovers by a positive process of adjustment to his environment, rather than by isolation and segregation from it. It is, of course, granted that there are patients who cannot recover in their usual environment, but they are fewer than is generally conceived. The patient managed by this technic is, moreover, armed in a positive way by reeducation for the future, rather than merely tided over the present situation by his rest.

It may be argued that there is a positively unmoral quality to the fatalism and repudiation, the outright enjoyment of irresponsibility to be taught the patient under caption 1. Patients will usually make this objection to the view advocated. They may be assured of the harmlessness of the procedure for their type, which is so constructed at birth that it can never adopt hedonism as a lifelong philosophy. They will return to their responsibilities all too soon and all too personally, for their egocentricity will propel them willy-nilly. They should be told of the analogy of muscular fatigue and the delayed recovery after once passing the fatigue limit, and impressed with the four thousand year old words of the Ancient Wisdom attributed to Ptah Hotep, whose couplets should be on the desk of every neurodermitic subject:

> The archer striketh the target,
> Partly by pulling, partly by letting go,
> The boatman reacheth the landing,
> Partly by pulling, partly by letting go.

It is a test of nonreception by the patient and his need to profit by this point of view, when, after its presentation, he replies eagerly "Doctor, I'll try to do what you say!" He is at once reproved for again bringing effort to bear on what can and should be done only by a shrug, a gesture of dismissal. The rapidity and extent of the relief of mental tension afforded by the question "A hundred years from now . . ." is a constant surprise. It is grasped like a straw by a drowning man, and often nothing more than a little training in the Jacobson technic of relaxation is necessary to start recovery. The attack on the procession of "musts" can well begin with the order to stay in bed for breakfast and to have the telephone answered by some one who will say in almost joyous accents: "The doctor says Mrs. X is ill and must not be disturbed. She regrets that she must present her resignation, under his orders, from your committee." This invocation of the sickness defense, perhaps dangerous when self adopted, is quite harmless under supervision, in my experience. The cancellation of the business lunch, a device of the devil in the American technic of living, reading at the table instead of correcting the children or being agreeable, and the noonday break and rest on a couch while the telephone is plugged are useful details that are much more practical than the taking of long vacations away from home. The mere description of destinationism usually suffices to induce the patient to try the casual and episodic as a relief. He can appreciate the reminder of his bent-pin fishing days when a subsistence catch or less was enough, and the surroundings, not the fish alone, made the fishing memorable. Stopping all forms of score counting is literally the first step in this readjustment and often requires the withholding of daily papers, business reports and visits from partners, wives and husbands. The discipline in objective self analysis sounds like child's play, but it is not. Its systematic practice leads to a remarkable recovery of balance and perspective. The turbulent, weak and unstable elements in anything approaching a normal personality, segre-

gated in this way, slowly become controllable rather than merely stamped on and suppressed. This is decidedly preferable to the false front of the "poker face," hiding a scratching, kicking child beneath her apron, so to speak. It disarms Little Mary to view her sympathetically but with detachment as a brat common to all of us. To the charge of egocentricity most human beings react instantly with a defense, followed by retreat and readjustment, so that it is comparatively easy to get the patient to see the point in caption 3. This is notably an element in the prurigo-asthma-hay fever personality in which intense egocentricity appears now in competition for marks in school, now in violent antagonism to a particular teacher, now in conflict with a "don'ting" parent and again in an impenetrable chevaux de frise of negativism and inaccessibility. The guidance of these patients into outlets in which their best finds expression with comparative smoothness of flow, instead of a perpetual clatter over stones, is a task for the behavior specialist and the mental hygienist.

A distinction is drawn between neuromuscular tension release and neuromuscular discharge by muscular work. It is explained to the patient that all thought translates itself instinctively into one or another form of muscular effort which, if it does not result in gross movement, at least puts muscles under tension, exhausts energy, heightens irritability and makes constant demands on the nervous, endocrine and vasomotor systems. A reversible relation exists in the equation representing this process ("no affect without effect"), so that it is possible to reduce the activity of the mind, calm it, rest it, by learning to recognize the tension of groups of muscles and by issuing to them an order to relax. To train himself in letting go, the patient must, as Jacobson[4] has so beautifully pointed out, learn to detect the feel of tension in his back, his neck, his arms, his diaphragm, his fingers and feet, his very supra-orbital and ocular muscles. In the technic that I describe to the patient, he begins on retiring. As he lies with his eyes closed, he makes the round of his musculature, like Diogenes with his lantern, looking for a tight member. When found, the muscle group is ordered to let go. In a surprising way, when it is part of the general reassurance and adjustment process that I have described, patients learn to transfer the ability to detect tension and to give the order to relax, to the conditions of their working and, what is more important, their worrying day. In the midst of preoccupation they can thus introduce periods of invisible rest, calming the mind, reducing the stream of motor impulse and the needless friction of conflict to a minimum. By a process of reversal, the ordering of the discharge pattern of a laugh to replace the contorted visage and tense muscles of rage unblasts the lightning, so to speak, and, though the laugh may in its incipience be a risus sardonicus, practice in time makes it a genial saver of the day.

As I have observed it, tension release is not usually sufficient. A technic of motor discharge devoid of the defects incident on the competitive, the destinational and the obligatory must be taught. To secure this essential point of view toward the matter, the patient is told to make craftsmanship, the well doing of some work for its own sake, his motive, rather than success involving comparisons. Thus, in a way, an artist loses caste in this field if he exhibits or tries to sell, the poet if he seeks publication, the woodcarver if he calls in all his friends to sit or see. Excess routinization and mechanical performance of the selected work must be difficult or impossible; hence the worthlessness of mechanically performed housework and dishwashing as relief or discharge. Use of the small muscles of the hand and the eye in movements of precision gives the patient his sense of personal achievement. Of all commonly available devices the cross-country walk, the swim and the handicraft (which includes household tinkering) seem most available and serviceable. The essential in these discharge devices is, as I have said, a lack of specific time of completion, of destination and of stereotyped method. They must have a wandering casual quality, enjoyment for the present without thought of the past or future, without scheduled arrival, departure or route. The eyes, mental if not physical, must be on distant, impersonal gods; clouds, trees, the contest with and adaptation to the primitive—water, sun, wind, the earth. I have had diathetic persons repeatedly tell me that they have recovered while strolling in this way over hills that must have been green with the very plants to which they were cutaneously sensitive. This lowering of the threshold of nervous, perhaps sympathetic, irritability is a now recognized aid in the treatment of allergic processes, including asthma, and can very properly be applied to the treatment of the skin. We are all, and our patients too, familiar in theory with its virtues. The neurodermitic often only need to be reminded, albeit repeatedly, of its worth to them.

The use of the sense of humor or, better, of the ludicrous is more widely applicable than one is apt to believe as one views the dour or despairing countenance of the scratcher before him. The habit of taking himself seriously, the mistake of expecting personal justice and recognition in a world only a minute sector of whose horizon he is capable of perceiving, to say nothing of interpreting, accentuates, acutely or chronically, the vexation and irritability that underlies the cutaneous neuroses. By a flick as of an electric switch many patients can be brought to see the joke of it all, the scurvy joke, to be sure, but none the less the ludicrousness of expecting the universe to tune in on them and their miseries. Once convinced that, as with Will of the Mill, the stars do not jiggle at his shout, he settles down to something outside himself as more interesting and laughs off his itch. This is, in all seriousness, an important step in the recovery from and the prevention of secondary lichenification in the urticarial and neurodermitic subject. If, when the patient feels the peculiar pinging itch of which he complains, he can be induced to shrug and laugh and say "Hello, old boy, back again; sorry, too busy," and turn away amused, instead of digging in in rage and fear, half the battle is won.

CONCLUSION

The concluding paragraph of this presentation should be one of caution. This has been a description of a method for dealing with one factor, under everyday conditions, in the clinical background of the neurodermatoses. It is not offered as a substitute for a proper testing for allergic excitants, for focal infection studies, for the icterus index or for the numerous other avenues of approach to the multiple causal background in each case. It simply presents a technic of neuropsychiatric reeducation in the environment, usable by

4. Jacobson, Edmund: Progressive Relaxation: A Physiological and Clinical Investigation of Muscular States and Their Significance in Psychology and Medical Practice, Chicago, University of Chicago Press, 1929.

the humanely interested and reasonably experienced physician in his office. Of its worth in displacing phenol, menthol, the barbituric acid derivatives and expensive and unattainable rest prescriptions from dermatologic practice, I can personally testify.

3800 Chestnut Street.

ABSTRACT OF DISCUSSION

DR. EARL D. BOND, Philadelphia: I am glad that dermatologists do not think that they have to take over psychiatric terms in dealing with the practical emotional problems that occur in practice. Dr. Stokes has used his own original, practical methods, but he has worked on correct psychiatric principles. It has been recognized that the mental factors in most diseases are best handled by the doctor who gets there first; he has a chance to turn back the nervous symptoms when they are forming; with the right word or the right attitude he can discourage unwholesome emotional expression. The psychiatrist, keeping on his intensive treatment of difficult cases in his own field, can get ideas and learn lessons from his patients which he can pass on to practitioners in other fields. The dermatologist must often be the second doctor, the case being passed on to him by the family physician. For that very reason he must lose some chances for early recognition and the easiest treatment of mental and other factors, but he can much more easily than the psychiatrist, who must at the very best be the third consultant in the case, open wide the consideration of the patient's whole personality. The thing that psychiatrists have learned to do lately (and it has helped them more than anything else) is to listen. I often hear patients tell me: "The other doctor just as soon as I opened my mouth to tell him how I felt put a tongue depressor in it." When advice and reassurance are needed, Dr. Stokes gives six points which are effective and which are also general. This is supportive treatment. It doesn't take the place of the other pharmacologic and dietetic treatments. He avoids the danger of giving definite advice, of entering too much into the specific mental problem that the patient has. He leaves the patient to work out much of his own salvation. It is good for physicians to be told often how much "the skin is a loudspeaker of the soul."

DR. S. WILLIAMS BECKER, Chicago: The author's method of approach is ideal and will produce a high percentage of favorable results in skilled hands, but, like the teaching to patients of Jacobson's progressive relaxation, may not be efficiently utilized by the average physician. I have evolved a method of approach by the average practitioner the simplicity and applicability of which make it the most valuable part of the therapeutic armamentarium. I wish to emphasize the author's insistence on the avoidance of all semblance of hurry, since it is obviously difficult for a rushing physician to convince a patient that she must slow down, and this type of therapy requires longer sessions than are necessary in other instances. With the patient draped on the examining table, the physician, fortified by physical observations, quietly informs the patient that she has a common, harmless condition that is rather easy to remedy, provided her cooperation can be obtained. The physician thus capitalizes on the marked suggestibility of these patients. She is told that the simplest, most easily understood explanation is that the dermatosis represents perverted fatigue: instead of her feeling tired, her skin has broken out. Treatment will be followed by an appreciation of a feeling of fatigue and the dermatosis will improve. Therapy is directed first toward predisposing factors, such as overwork and disagreeable surroundings, and secondarily toward relief of the underlying exhaustion, by daily naps, daily sunshine exposure and temporary sedation by phenobarbital, which I consider indispensable in children and temporarily advisable in adults. I have obtained almost unbelievable improvement by hospitalization and sedation similar to that used in treating the psychoses. The patient must learn the virtue of patience, tolerance and selflessness. Attention must be directed toward the sensory portion of the high-powered brain by telling the patient that she is the victim of exaggerated impulses, especially initial impulses which exert greater power over her than the precipitating causes warrant. While certain parts of this simplified procedure may require special ability, insistence on a daily nap and daily sunshine exposure, along with temporary sedation by phenobarbital, can be prescribed by any physician and literally save the patient from herself.

DR. ELMORE B. TAUBER, Cincinnati: There is one thought that should be brought out here that is very pertinent and germane in these times of laboratory stress: This is a return, to clinical medicine, and Dr. Stokes has laid a splendid foundation to the pioneer back-trail to the art of medicine.

DR. JOHN H. STOKES, Philadelphia: It is a pleasure to hear Dr. Becker's simplification of the technic. In Chicago probably they don't have the desperations that they have in Philadelphia. My situation has been unfortunate in that I have had to deal with desperate men and desperate women who could not possibly take a daily sun bath or allow any time for a lamp treatment, or at least by no amount of mere argument could be led to believe that they could. That being the situation, I was forced to do it all in my office; and this is the result of fifteen years of it.

FAT EMBOLISM

CANADIAN CHAIRMAN'S ADDRESS

R. I. HARRIS, F.R.C.S. (C.)
Associate Surgeon, Toronto General Hospital
TORONTO

Fat embolism is one of the tragedies that haunt the efforts of the orthopedic surgeon. True, it occurs but rarely, but the dramatic suddenness of its onset and the fatality of its outcome create a profound impression.

Fat embolism occurs when fluid fat occludes the capillaries of important organs. The fat may come from any of the fat depots of the body, but for mechanical reasons, which will be discussed later, the fat contained in bone marrow is the commonest source. Normally, fat is stored in the form of globules, fluid at body temperature, within the cell envelops of fat cells. Before fat embolism can occur, this fat must be set free by rupture of the cell membranes. Accidental or operative trauma is the usual agent that ruptures the cell membranes and sets free a quantity of fluid fat. Since bone marrow is the common source of the fat that gives rise to fat embolism, fractures and, to a less extent, orthopedic operations on bones are the usual antecedents of fat embolism. Though it is a rare complication of orthopedic operations, it probably is more frequent than is realized, since it is not readily recognized. This fact, in addition to its serious nature, justifies consideration of it on this occasion.

MECHANISM WHEREBY FAT EMBOLISM ARISES

It seems curious that such a normal constituent of the body as fat can give rise to fatal embolism. Some consideration of the complex mechanism whereby it occurs is essential to a clear understanding of the lesion. In lipemia, fat may be present in the blood stream in large amounts without embolism occurring. Lipemic fat, however, is finely emulsified and the finely divided particles easily pass through the capillaries. In fat embolism the fat is present in globules sufficiently large to fill the capillaries completely. Once this has occurred, the viscosity of the fat may be so great as to prevent the blood pressure behind from driving it through the capillaries. It is evident that fat embolism can occur only when fluid fat is set free in considerable amounts and under circumstances that will permit its easy entrance into the blood stream.

The cell membranes of fat cells are easily ruptured. Any trauma that involves adipose tissue results in the

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freeing of considerable quantities of fat, which at body temperature is quite fluid. The briefest observation will reveal how surprising is the amount of fluid fat that may be set free during an operation. From such a simple procedure as removal of a bone graft from the tibia there may accumulate as much as an ounce of fluid fat. When bones are injured, therefore, there is no lack of free fat for the potential production of emboli.

The mechanism whereby this free fat enters the blood stream is less evident. Though veins may be cut across or torn by operations or trauma, which at the same time free fat from its cell envelop, it is unusual for fat to enter the venous system. The sectioned veins collapse and the pressure of venous blood causes slow outpouring from the veins until such time as spontaneous clotting occurs. Fat can enter the venous system only under circumstances that will prevent the open ends of the veins from collapsing and permit the fluid fat to accumulate at a pressure greater than venous pressure. Three things are necessary before fat embolism can occur: (1) free, fluid fat, (2) accumulated under a tension that is greater than venous pressure and (3) open veins, the open ends of which do not collapse. Only under very special circumstances, fortunately, may one expect to see fat embolism.

Injuries to bones provide exactly the factors necessary for the production of fat embolism. There is abundance of fat in the bone marrow, readily set free by trauma or operation. The veins are held open by their attachment to the bony haversian canals in which they run. It is not difficult for the wound exudate to accumulate under considerable tension. In operations on soft tissue the reverse is the case. Though there is abundance of adipose tissue and though much fat may be freed, entrance into the venous system is prevented by collapse of the veins. Wound exudate is less likely to accumulate under tension; more often it seeps out along the line of suture. There is less opportunity for the application of firm dressings than in operations on the extremities and hence less sealing of the exudate within the wound. Hence fractures and orthopedic operations constitute the most frequent antecedents of fat embolism.

PATHOLOGY OF FAT EMBOLISM

Once the fluid fat has been forced into the venous system, it is carried by the blood stream to the capillaries of the lung. The extent of the pulmonary embolism that thus arises is dependent on the amount of fat which enters the blood stream and the length of time during which entry is occurring. A large amount of fat forced rapidly into the venous system will produce the maximum effect, while a small amount, especially if forced in slowly, may cause no symptoms whatever. Extensive pulmonary embolism with fat gives rise to a definite clinical picture, the outcome of which is often fatal. Obstruction of the pulmonary capillaries interferes with oxygenation of the blood; hence cyanosis is a prominent symptom. The peripheral blood pressure falls from failure of an adequate amount of blood to reach the left side of the heart. Damming back of the pulmonary circulation results in great dilatation and ultimate failure of the right side of the heart.

If the right side of the heart is sufficiently powerful it may force some of the fat emboli through the pulmonary capillaries into the peripheral circulation. There it again comes to rest in the capillaries of any part of the body. The resultant symptoms are dependent on the nature and importance of the organ involved. Cerebral embolism is the most common, most important and most serious manifestation. This occurs, naturally, at a time subsequent to the pulmonary manifestations and it also is often fatal. The cerebral lesions that result are focal areas of necrosis, centered on the occluded artery and surrounded by a zone of hemorrhagic exudate.

Though the cerebral lesions are the most important of the peripheral manifestations, emboli may occur in any organ. Of the fat emboli that reach the kidney, a considerable quantity are excreted in the urine. This is of importance, since it constitutes one of the few exact means by which the condition can be recognized.

CLINICAL MANIFESTATIONS

From a consideration of the pathology of fat embolism it is evident that the lesion will manifest itself clinically in two principal ways, corresponding to the involvement of lung and of brain. Though many other organs than these may be involved, the conspicuous symptoms are related to the pulmonary and to the cerebral lesions.

Pulmonary Form.—Symptoms of pulmonary fat embolism appear shortly after the fracture or operation. They may be so severe as to cause death in a few hours, or so mild as not to be recognized. It is obvious that the severity of the symptoms will depend on the amount of fat that has occluded the pulmonary capillaries. Within a few hours the patient becomes cyanosed, complains of a sense of constriction about the chest and suffers air hunger. The pulse becomes rapid, feeble and irregular. The blood pressure falls. Death occurs from cardiac and respiratory failure. As Warthin [1] pointed out in his classic monograph, the distended capillaries may rupture and pour into the alveoli some of their contained fat. The sputum then contains free fat globules and fat-containing alveolar endothelial cells.

Cerebral Form.—This appears later than the pulmonary form, usually after the lapse of two or more days from the accident. In this interval the patient is free from any cerebral symptoms. Then follow restlessness, delirium, drowsiness and coma. Death may follow but recovery may take place. As this is a manifestation of systemic fat embolism, the evidences of involvement of other organs may be present. Most important of these, from the point of view of diagnosis, is the presence of fat in the urine as the result of kidney involvement.

DIAGNOSIS

The diagnosis of fat embolism is not easy. Since most cases occur in patients who have suffered severe injuries or have undergone extensive operation, it is not unnatural to regard their symptoms as due to cerebral concussion or shock. Even at postmortem recognition may be difficult, since the emboli are dissolved by the ordinary preparation of specimens in graded alcohols. Fat emboli can be demonstrated only by fat stains on frozen sections. It is altogether likely that mild degrees of fat embolism are common. An appreciation of this will be the most important aid to diagnosis. The knowledge that fractures and orthopedic operations are frequently followed by fat embolism will lead one to regard any pulmonary, cardiac or cerebral symptoms that may supervene as possible evidences of the condition. Definite and certain tests to determine the presence of fat embolism are lacking.

1. Warthin, A. S.: Traumatic Lipemia and Fatty Embolism, Internat. Clin. 4: 171, 1913.

Warthin, who first noticed the fat in the sputum, was inclined to think it was present in every case, but many writers have not been able to confirm this. The presence of free fat in the urine, when it occurs, is an extremely valuable aid to diagnosis. It cannot occur, of course, until systemic invasion has occurred, and sometimes is not then present. To date the diagnosis of most of the cases is based on postmortem evidence. With increasing recognition of the importance of fat embolism, more cases are being diagnosed on the basis of clinical symptoms.

FAT EMBOLISM COMPLICATING ORTHOPEDIC SURGERY

The occurrence of fat embolism as a complication of orthopedic operations is a matter worthy of serious consideration. Many fatal cases, proved by postmortem, have been reported in the literature. It is more than probable that many fatal cases have occurred without the true diagnosis being made and that recovery has occurred in innumerable milder cases without the suspicion of fat embolism. As Bissell [2] observes, the falling arterial pressure and rising venous pressure of fat embolism closely resemble postoperative shock, and not unnaturally the death of a patient within a day or two of operation with a rapid feeble pulse is usually attributed to shock. The usual methods of examining tissues removed at postmortem fail to reveal fat embolism. Frozen sections and fat stains are necessary. Hence many cases almost certainly are missed. An interest in the problem frequently reveals a series of cases that otherwise would not have been recognized.

My own interest in fat embolism commenced with the loss of a patient following an operation for arthrodesis of a tuberculous hip:

A. G., a French-Canadian boy, aged 17 years, was admitted to Weston Sanitarium June 27, 1934, for the treatment of tuberculosis of the hip. The history was characteristic and the physical and roentgen examinations gave equally characteristic results. November 22 an operation for arthrodesis of the hip was performed. This involved exposure of the hip through a Smith-Peterson incision, the removal of carious bone, and the placement of a large graft across the line of the joint from the acetabulum to the neck of the femur. The operation was expeditiously performed and did not give rise to shock. A transfusion of 500 cc. of blood followed the operation as a routine measure. Two hours after the operation the boy was in good condition except for a rapid pulse. Six hours after the operation he became cyanosed and complained of a sense of constriction about the chest. The cyanosis steadily increased, the pulse became rapid and feeble, and the temperature rose to 103. He died twenty hours after operation. Postmortem examination revealed extensive fat embolism of the lung and slight fatty infiltration of the heart muscle.

I am indebted to Dr. K. G. McKenzie for the opportunity of reporting the following case:

H. L., a man, aged 35, sustained a fracture of the tibia, April 2, 1935. There was no head injury and he was not unconscious. The fracture was treated by open reduction and plating on April 3. He remained conscious and perfectly clear mentally until April 5. April 6 he became restless and would not respond to questions or cooperate in examination. Though he had had no sedative, he could be roused only with difficulty. He would not talk. There was no paralysis. Lumbar puncture revealed a clear fluid under increased pressure (17 cm.). The pupils were equal and small. There was early choking of the disks. On this day he commenced to cough up some frothy bloody sputum. The temperature was 102 F. and the pulse 120. The succeeding day he remained stuporous with intervals of restlessness. He remained restless and irrational until April 12 and then slowly improved. By April 19 he had apparently recovered completely from the cerebral lesion. The urine collected on April 7 contained fat. The sputum was not examined for fat. April 16 he developed a patch of pleurisy on the right side, which cleared up in two days, and on April 23 a similar transient pleurisy occurred on the left side.

This is a clear example of cerebral fat embolism with recovery. The history of fracture and operation, the late appearance of cerebral symptoms and the presence of fat in the urine are all characteristic features. The late pleurisy probably represents the cyclic embolism of the lung described by Warthin.

The following two cases are included as probable examples of fat embolism, though definite evidence is lacking:

A boy, aged 10 years, was operated on for the removal of sequestra from osteomyelitis of the tibia. Toward the end of a rather long operation his respiration became embarrassed, cyanosis supervened and he stopped breathing. After an interval of artificial respiration, respiration recommenced but was irregular. Finally death occurred in half an hour. Postmortem examination failed to reveal any clear reason for death. Fat embolism was not suspected and was not specifically sought.

A man, aged 40, was operated on for the purpose of fusing a tuberculous hip. As the operation was being completed his respiration became embarrassed. In spite of artificial respiration he died on the table. Postmortem examination did not reveal any clear cause of death. Fat embolism was not suspected and not sought for.

These two cases resemble closely the proved cases quoted by Timmer [3] in which death followed operation and postmortem examination revealed fat embolism of the lung and the brain. They are unusual in the rapidity of onset and the severity of the symptoms and the early death. They suggest that sudden death during operations may sometimes be caused by fat embolism.

TREATMENT OF FAT EMBOLISM

Unfortunately there is no adequate treatment of fat embolism. Much can be done to prevent it by the careful handling of fractures. The more the site of fracture is traumatized by unnecessary handling, the greater will be the amount of fat set free and the greater will be the tendency to drive it into the venous system. It may well be that fat embolism following orthopedic operations might be prevented by draining the wound for twenty-four hours. This would permit any free fat to drain away and would prevent the accumulation of wound secretions under the tension necessary to drive them into the veins. Ryerson's suggestion that a tourniquet will prevent the occurrence of fat embolism is probably a valuable one. Certainly while the tourniquet is on no embolism can occur and during this interval the opened veins have an opportunity to develop occluding thrombi.

Once established, fat embolism can be treated only by symptomatic measures. Venesection to relieve the distended right heart is probably of value. The administration of saline solution intravenously may facilitate the passage through capillaries and aid in freeing some of them of their fatty emboli. An oxygen tent should be used for the treatment of cyanosis.

CONCLUSIONS

1. Fat embolism is a serious complication of injuries to and operations on bone.

2. Its occurrence is probably more common than is realized, since the symptoms may easily be mistaken

2. Bissell, W. W.: Pulmonary Fat Embolism, Surg., Gynec. & Obst. **25**: 8 (July) 1917.

3. Timmer, H.: Epileptiform Convulsions and Fat Embolism After Nonsurgical Orthopedic Intervention, Nederl. tijdschr. v. geneesk. **2**: 173 (July 19) 1919; abstr. J. A. M. A. **73**: 1403 (Nov. 1) 1919.

for shock and the lesion will not be found post mortem unless special methods of examination are used.

3. Clinically it manifests itself in a pulmonary and a cerebral form.

4. The occurrence of fat in the sputum and in the urine are valuable diagnostic signs.

5. The possibility that pulmonary embolism may complicate orthopedic operations should be borne in mind and such preventive measures taken as seem valuable. A tourniquet should be used in operations on the extremities. Drainage of wounds of bone for twenty-four hours probably would prevent at least some cases of fat embolism.

609 Medical Arts Building.

THE PEDIATRIC VIEW OF OTOLARYNGOLOGY

EDWARD CLAY MITCHELL, M.D.
MEMPHIS, TENN.

The pediatrician has been defined as a general practitioner who limits his field of practice within the boundaries of the ages of childhood.

Pediatrics has been defined as that branch of medicine which has as its purpose the making of a better next generation. Infancy and childhood constitute the period of rapid growth, of perfect or imperfect development, of habit formation. Metabolism differs in the child. The reactions to various stimuli are intensified. Not only must the pediatrician be a well trained doctor, but for the reasons mentioned special training is deemed necessary for proper diagnosis and the care of the child. The particular preparation necessary for the pediatrician is that of a specially trained "internist" with an age limitation. In actual practice his responsibilities extend from the birth of the baby until the child has reached the age of puberty and are all inclusive not only of illnesses and accidents but also of diet, prophylaxis and general care. In these responsibilities and relationships the pediatrician more closely than any other medical specialist approximates the varied practice and independence of the "old family physician."

Although the pediatrician thus accepts responsibility for the well being of the child, he often finds himself in need of advice and assistance by specialists. The most frequent and continuing necessity for such consultation and assistance is dictated by the dominant rôle of the upper respiratory tract in the early life cycle of the child. It is the relationship between pediatrician and otolaryngologist that I shall undertake to analyze. Four considerations are of primary concern:

First, and possibly most important, the care and immunization of the well child.

Second, acute conditions involving the upper respiratory tract.

Third, chronic infection that affects nutrition and general health.

Fourth, coordination in study for the advancement of mutual knowledge. Physicians, particularly specialists, are too often satisfied with, and rely too largely on, their own experience. One of our medical philosophers, Dr. Abraham Jacobi, has said "A man may do the same thing wrong for fifty years and call it experience."

From the Department of Pediatrics, University of Tennessee College of Medicine.

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THE CARE AND IMMUNIZATION OF THE WELL CHILD

(*a*) *Heredity.*—Many of the mental and physical characteristics that affect the life of the child are inherited. Shea[1] believes that the sinuses follow closely, not only in conformation but also in their life history, the developmental cycle of the sinuses of the parent the child most resembles facially. Heredity is also a considerable factor in the shape of the bones of the face, particularly the dental arches. Allergy, another hereditary character, is increasingly important. Of the various allergic manifestations seen in the infant and child, from 75 to 80 per cent are now thought to be hereditary.

(*b*) *Antepartum Care.*—The care of the child should begin with the care of the mother during, and even before, pregnancy. Numerous considerations dictate the importance of such antepartum control. For example, fetal rickets with its deformities is now recognized as a well defined entity. Calcification of the teeth begins about the one hundred and fortieth day of life, and at birth the deciduous teeth are fully calcified and the permanent teeth partially so. What is true of the teeth is true of the entire bony structure of the body. Again, contagious and infectious conditions occurring during the fetal period may be responsible for deformities that materially influence function throughout postnatal life. With syphilis, if treatment is begun immediately after conception and continued throughout pregnancy, the course of the disease will be favorably influenced even if a cure is not accomplished. A careful family history and thorough physical examination are the first essentials.

(*c*) *Management of Nutrition.*—The undernourished child is less resistant to infection and fails to grow and develop normally. The child whose parents are weaklings, who has a bad home environment or is poorly fed is sometimes described as constitutionally inferior, for want of a better term. This is the type so commonly seen in free clinics. In many such cases the nutrition problem is the only one to be solved.

Pediatricians have long recognized that breast milk is generally the optimum food. However, even breast milk sometimes does not serve all the requirements, depending often on the diet and habits of the mother. There is no uniformly perfect food. Each child is a separate problem. As a growing organism that doubles in weight during the first six months, trebles in weight in one year and continues to grow rapidly until after puberty, development must keep pace with growth. If certain fundamental nutritional factors are kept in mind and carefully and conscientiously observed, with proper care good results may be had with almost any rational food mixture. The young infant must have sufficient of the energy producing and structure forming foodstuffs; that is, carbohydrates, fats, proteins, mineral salts, and water. Its diet must also include the accessory foodstuffs, the vitamins. Plenty of sunshine, fresh air and proper clothing must be provided. Elementary as these requirements may appear, they must be strictly observed to avoid imperfect nutrition and development with resultant deformities. No matter how well balanced the diet, proper nutrition cannot be accomplished without normal assimilation and metabolism. At no other period of life do the secretions from the ductless glands play so important a part.

1. Shea, J. J.: Normal and Pathologic Development of the Sinuses, Pennsylvania M. J. **37**: 270 (Jan.) 1934.

Much has been written about the benefits of special diets for the so-called lymphoid type of child. It has been claimed that a high carbohydrate intake predisposes to hypertrophy of the lymphoid tissues of the upper respiratory tract. The scope of this paper will not permit further discussion than to reiterate that the diet should be balanced in respect of all known nutritional essentials and then fitted to the individual child, frequently by the method of trial and error.

(*d*) *Immunization.*—Since whooping cough, diphtheria and scarlet fever are responsible for many otolaryngologic complications, immunization of the normal child against these three diseases will be discussed.

Whooping Cough: There is probably no inherited immunity to whooping cough. It occurs even in the extremely young child. Within the last two or three years immunization against whooping cough has been increasingly undertaken. Sauer [2] has recently attempted the immunization of a series of young infants at the Cradle, in Evanston, with seemingly good results. Sufficient time has not yet elapsed to permit a conclusive opinion. This method is not dangerous, appears to have considerable value, and deserves further trial.

Diphtheria: There is a natural immunity to diphtheria, which seems to persist until about the sixth month. If all infants are immunized at this age and controlled by the Schick test, diphtheria may be eradicated as effectively as yellow fever.

Scarlet Fever: Much has been written by the Dicks and others concerning active immunization to scarlet fever. The present general opinion is that scarlet fever immunization is not as effective as is the toxoid for diphtheria.

ACUTE INFECTIONS OF THE CHILD INVOLVING THE UPPER RESPIRATORY TRACT

Brennemann [3] has written:

Why should a pediatrician, who is a general practitioner to the young, presume to discuss a subject that might seem to belong to a regional specialist. The answer is evident. In the first place, it is because he is a general practitioner and must therefore be usefully informed on one of the most common and most important diseases of childhood. . . . The pediatrician as a rule sees the patients for the underlying throat infection before the ear is involved. If he is a good pediatrician he has long ago found his otoscope as indispensable as his stethoscope and in some cases even more so. By examining all ears in as routine a fashion as he does the chest, he becomes familiar with the normal and with the abnormal through all the stages from the simple redness and congestion, which accompany nearly all nasopharyngeal infections, to the bulging ear that cries for surgical relief. Finally, he is in a position that the otologist cannot occupy—that of being able to size up the whole clinical setting, of which the otitis may be only a very minor part.

On the other hand, in the fully developed otitis and in all complications the otologist has a technical knowledge and skill that the practitioner does not possess. . . . The practitioner must acquire the ability to examine and to evaluate with reasonable accuracy an ordinary otitis media. He will treat it so long as he feels sure that surgical measures are not indicated. If the drum has ruptured and there is free discharge, the experienced pediatrician will not worry because of that fact. Rather, he will be happy to be able to spare the child the pain and psychic trauma of a paracentesis, without adding to the hazard. If the paracentesis seems indicated I have myself always called in an otologist, both as a matter of protection in case of a subsequent serious complication and to give the parents the benefit and the solace of a specialist.

Brennemann has summed up this phase of the subject admirably. A pain in the ear does not necessarily mean suppurative otitis media. The younger the child, the greater the likelihood of infection of adenoids and sinuses with ear involvement. As the child grows older, the tonsil is more frequently involved.

An adequate paracentesis seems to me to be not altogether a minor procedure. Some paracenteses never require repetition; in others, repetition is regularly necessary. Free and proper surgical drainage is essential. Considerable difference of opinion exists as to whether early paracentesis prevents or increases the incidence of mastoid complications. In 1922 I visited two European clinics, in one of which it was the practice to open no acutely involved ears; in the other, paracentesis was performed early. The mastoid incidence was somewhat lower in the clinic where the ears ruptured spontaneously. Whether this fact was due to differences in infection cannot, of course, be stated; but, undoubtedly, infection is spread and prolonged in some instances by opening drums unnecessarily, and particularly if aseptic technic is not employed.

Brennemann has also said:

In recent years the mastoid antrum without external evidence of involvement but with otoscopic evidence of "sagging of the posterior wall" of the canal has been advanced as a common cause or initiator of severe gastro-intestinal symptoms and intoxications, with striking and fairly constant therapeutic results from antrotomy. That some, including myself, have failed to get that therapeutic result may be the result, in part, of timidity based on a priori incredulity, or of a strange vagary of that ever varying and fickle thing we call the genius epidemicus of disease, which may have led to a peculiar heaping of favorably reacting cases in one locality or another.

My experience does not agree with that of Brennemann. I have had many cases in which antrotomy has produced definite results.

Recently, a child was admitted to the Baptist Memorial Hospital with a marked condition of pyloric stenosis. A Ramstedt operation was performed. Vomiting stopped. The child began to gain weight. Just about the time the patient was to be discharged an infection of the upper respiratory tract with vomiting developed. The condition became quite precarious. A double otitis media now developed. Roentgen examination of the mastoids showed that both were cloudy. They were drained surgically under local anesthesia. Considerable pus was found. Recovery was prompt and complete.

That the condition of the mastoid as a focal infection of the upper respiratory tract may be very difficult to diagnose is evidenced by the following case:

A boy, aged 2½ years, was admitted to the Baptist Memorial Hospital with from twenty-five to fifty bloody stools daily, marked dehydration, vomiting and high fever. The interesting feature of this case was that it came from the town of Osceola, Ark., from a levee camp where there were at this time numerous cases of true Shiga dysentery. There had been one death in the family, and two others in the family were suffering with dysentery. At the time the child was admitted to the hospital a diagnosis of Shiga dysentery was made clinically and treatment was instituted. Stool cultures sent to the laboratory were negative on three occasions. On the fourth day after admission the child showed a red pharynx and increased nasal discharge. Examination of the ears showed both drums bulging. The mother then on being questioned stated that six months previously the child had had double otitis media following what was called "flu." Roentgen analysis showed both mastoids involved. The mastoids were drained. The child was put on a full diet. No further treatment for the bowel condition was instituted. The child recovered rapidly and gained 9 pounds (4 Kg.) in nineteen days.

2. Sauer, L. W.: Immunization Against Whooping Cough, Am. J. Dis. Child. **49**: 69 (Jan.) 1935.
3. Brennemann, Joseph: Otitis Media as a Pediatrician Sees It, J. A. M. A. **97**: 449 (Aug. 15) 1931.

In a survey of the acute illnesses in the Memphis General Hospital, both in the new-born and in the children's services, covering a period of three years, it was demonstrated that 65 per cent of the infections were upper respiratory in type. A recent epidemic in the new-born service of this institution was characterized by coryza, swelling of the mucous membrane of the nose and throat, marked dehydration, and death in several cases. The portal of infection was undoubtedly the nose. The organism demonstrated was Streptococcus haemolyticus. Similar epidemics have been reported in other cities.

Vaccines.—Before the discussion of the acute infections is closed, a word may not be amiss as to the value in children of vaccines that are used by some with reported good results in both the acute and chronic types of infection. The value of the vaccines, both autogenous and stock, has been exploited. I believe that an autogenous vaccine is of greater value than stock vaccines. I am using a vaccine designated as the seasonal vaccine. The laboratory isolates the predominating organism from the culture of the infection current in our city. The vaccine prepared from this organism is added to an autogenous vaccine, the mixture being administered in exceedingly small doses. In the chronic cases, vaccination is repeated three times during the year, in the fall, winter, and spring seasons. Five injections constitute a series. In the severe cases of acute and chronic infections, in which the hemoglobin and red cells are low and the child seems to lack resistance, transfusion of fresh blood is indicated, particularly in those instances in which operative procedure is imminent. Comparative results over a period of several years convince me of the value of this procedure in my practice.

CHRONIC INFECTIONS AFFECTING NUTRITION AND GENERAL HEALTH

(*a*) *Tonsils and Adenoids.*—Opinion has changed within the past few years as to the status of the tonsils and adenoids. Only a few years ago I heard a prominent member of this section state that the only good tonsil was the tonsil in the bottle. Since then he has retracted that opinion. Twice within the last year I have heard Dean express the belief that the tonsil has a function, which possibly is to act in some manner not yet demonstrated as a barrier against infection. The life cycle of the tonsil supports this concept of function in that the adenoid or pharyngeal tonsil is most active in the infant; as evidenced by its hypertrophy during this period. Later the faucial tonsil takes over the burden and is most hypertrophied during the period of childhood. The lingual tonsil plays a minor rôle until adult life. The fact that first the pharyngeal and later the faucial tonsil atrophies in the normal child is also significant.

If the tonsil has the suggested function, its removal when healthy in the young child is contraindicated. It has been the experience of Shea and Mitchell that paranasal sinusitis has been much more frequent and more severe in the child who has been tonsillectomized early in life.

Dean [4] states that the removal of the tonsil should be decided by a history of repeated attacks of tonsillitis or based on definite evidence that the tonsil is acting as a focus of infection; that hypertrophied tonsils and adenoids should be removed only when they obstruct breathing. A thorough physical examination should be made, including blood clotting time, red blood cell and hemoglobin estimation, and urinalysis. Many bad results will be avoided by this routine. No child should be operated on who shows any evidence of acute infection, whose clotting time is not normal or who evidences any severe degree of secondary anemia. It has been my practice in recent years to give a fresh blood transfusion before operating on a child whose hemoglobin is 65 per cent or less and in whom the indications are that not sufficient time can be allowed to build up the blood condition by other means. I have followed the same procedure prior to operating on chronically infected mastoids in patients who exhibit anemia.

Postoperative Care: Care during convalescence prevents complications. All tonsillectomized children are kept in bed for one week. Kaiser [5] has shown that the sedimentation time is markedly increased following tonsillectomy.

(*b*) *Paranasal Sinuses.*—Paranasal sinus infection is a condition that interests the pediatrician as much as the otolaryngologist. Most of the chronic sinus sufferers, indeed, are not examined for conditions referable to the upper respiratory tract; the sinus condition is disclosed only in the course of a thorough physical examination. The question may be asked, "How is the differentiation made between acutely and chronically infected sinuses?" It has been demonstrated that the paranasal sinuses in a healthy child have a regular cycle of development. I believe that disease inhibits this growth; that chronically infected sinuses do not develop until proper treatment is instituted; that diagnosis of chronic paranasal sinusitis depends on the topography of the sinuses rather than on the degree of cloudiness disclosed by the x-rays. I believe that the child with chronically diseased sinuses is a sinus sufferer throughout life; that unless these sinuses are influenced by proper treatment to grow the individual never becomes entirely normal. I believe further that, even up to the age of 9 years, chronically affected sinuses when properly treated will grow and become entirely normal by young adult life. These observations are based on clinical investigation continued over a period of twenty years. If these convictions are true, the time to effect a complete cure is during the period of childhood; that is, the growing period.

My experience has been that the diseased paranasal sinuses do act as foci of infection which are responsible for many chronic complications and that often failure to improve after tonsillectomy is attributed to sinuses that were diseased at the time or subsequently became diseased.

(*c*) *Allergy.*—Allergy undoubtedly plays a prominent rôle in paranasal sinus disease. The allergic individual may have poorly developed sinuses without evidence of other pathologic conditions. In many instances the sinuses of an allergic individual have been drained unnecessarily when the removal of the offending allergic factor would have benefited the patient. On the other hand, in some cases removing the allergic substance alone has not been sufficient to clear up the condition. I have improved the patient only after the infected sinuses were drained in addition to proper allergic treatment.

It has long been recognized that in many children allergy appears after infectious diseases when the resistance of the patient is low. For the same reason, raising

4. Dean, L. W.: The Tonsils, Their Function and Indications for Their Removal, J. A. M. A. **103**: 1044 (Oct. 6) 1934.

5. Kaiser, A. D.: The Relation of the Tonsils and Adenoids to Infections, Am. J. Dis. Child. **41**: 568 (March) 1931.

the resistance of an allergic patient suffering from an additional chronic infection will undoubtedly assist in clearing up the allergic manifestations:

The father of a boy, aged 8 years, was a sufferer from hay fever; the grandmother on the maternal side had asthma. The child had eczema when an infant. He began asthmatic attacks at the age of 4 years. These attacks were more severe during the spring and summer months. An allergic survey showed that the child was sensitive to all the spring grasses and particularly both types of ragweed. The pollens of several trees also produced a mild reaction. He was likewise sensitive to quite a number of foods, particularly milk, wheat and eggs. An extract was made of the offending pollens. The articles of diet to which he was sensitive were also eliminated. This treatment was continued for three years with little or no improvement. He was first seen by me last winter, when he developed a mild case of scarlet fever followed by one of the most severe attacks of asthma he had ever had. His tonsils had been removed at the age of 3 years. Following his attack of scarlet fever, a roentgenogram of the paranasal sinuses was made. The ethmoids and maxillary and frontal sinuses were found to be poorly developed. The maxillary sinuses were cloudy. A diagnosis of chronic paranasal sinusitis was made. The sinuses were drained in February of this year. The pollen injections and diet regulations were continued as previously. The mother stated that the child has had no asthma since the drainage of the sinuses, and he is in better health now than he has been in years.

Dr. J. C. Price,[6] chief of the tuberculosis service of the institutions connected with the University of Tennessee, states that by far the larger percentage of children diagnosed as having pulmonary tuberculosis are not tuberculous but are chronic sinus sufferers wrongly diagnosed and can be cured only by proper attention to the paranasal sinuses.

(*d*) *Chronic Mastoid Infection.*—This is of particular importance because the presenting symptoms are not always referable to the mastoid. In many instances even a history of mastoid involvement is denied or forgotten. There is no tenderness behind the ear. The canal shows a droop. The drum has a dull, parchment-like appearance. Disease can best be determined by comparison of the two ears when only one is involved. Examination is verified by roentgenology.

In September of last year two brothers, one 14 and the other 9 years of age, were admitted to the charity service of the Baptist Memorial Hospital. The older child was very edematous, with marked ascites. The urine showed four plus albumin and a variety of casts. The blood nonprotein nitrogen was normal, and the blood pressure was not elevated. The child was very anemic. A diagnosis was made of chronic nephritis of the parenchymatous type, or nephrosis. The history was of an otitis media two years previously, and a chronic discharging ear since that time on one side; the other ear suppurated whenever the child developed a cold. The paranasal sinuses were cloudy and poorly developed. The tonsils had been removed. Roentgen examination showed marked involvement of both mastoids. The mastoids were drained and marked destruction found. The child did not improve. This was a case in which neglected diagnosis of the upper respiratory tract as a focus of infection was undoubtedly responsible. The younger brother had had scarlet fever two months prior to coming to the hospital. His face was swollen and edematous; there was no ascites; some puffiness and edema of the extremities were present. The urine was bloody and much reduced in amount, with many red cells and pus cells. The blood pressure and blood nonprotein nitrogen were elevated. The tonsils were enlarged. The paranasal sinuses were poorly developed and markedly cloudy. A diagnosis was made of acute glomerular nephritis with pyelitis. The kidney condition was treated. The child improved, and the amount of urine increased. It was decided to drain the paranasal sinuses and to postpone tonsillectomy. After drainage of the sinuses the child returned home in good condition. Following a second cold some months later he returned to the hospital with a recurrence of the kidney condition. When the acute infection had subsided the tonsils were removed, and his condition improved. Undoubtedly in this case the upper respiratory tract was responsible for the kidney infection, and the focus was eradicated in time, before the kidney substance was destroyed.

6. Price, J. C.: Personal communications to the author.

These two cases are typical of a very large number that could be cited to support my thesis.

COORDINATION IN STUDY FOR THE ADVANCEMENT OF MUTUAL KNOWLEDGE

A recent survey disclosed that 90 per cent of the children in the state of Tennessee were being treated by the general practitioner. I do not have statistics to show what proportion of infections of the upper respiratory tract are being handled by the family physician; undoubtedly, the proportion is large. In somewhat smaller degree the same conditions prevail in the North, East and other sections.

The general practitioner cannot be blamed entirely for the poor pediatric and otolaryngologic care frequently provided. The tendency in recent years to specialize without proper general medical training and experience is largely at fault. With establishment of the National Board of Medical Examiners to qualify specialists and to inform both the profession and the public of those qualified, improvement in this condition may be anticipated.

The general practitioner welcomes the round table discussions conducted by men who are competent because of their clinical experience. The public is now greatly interested in all phases of the care and well being of the child. It is receiving much misinformation, and, in its zeal to do something, is sponsoring movements and programs that are not only useless but actually detrimental.

A campaign of education outlined and conducted by men of standing and experience would be acclaimed and would displace propaganda which the medical profession is now criticizing. As physicians we indict outside organizations for usurping what we consider our privileges. In many instances we have only ourselves to blame for lack of interest and energy. The public has been educated to the point that it now demands certain information, advice and care. In addition to a campaign of education, the medical profession should certainly supervise operative and nutritional clinics for the child. At least one prompt result would be elimination of mass tonsillectomies done without reason and often productive of harm.

CONCLUSION

As a pediatrician, devoted to that branch of medicine which has for its ideal the making of a better next generation, I have often needed, and shall often need, the help of the otolaryngologist.

1073 Madison Avenue.

ABSTRACT OF DISCUSSION

DR. PERCY WRIGHT, Montreal: Children of the wealthy and of the indigent who become hospitalized receive the best that medical science offers. Those of the middle classes are often denied consultants in protracted cases. With the hospitalized child, intimate correlation of work between the pediatrican and the specialists is maintained. Regarding the four classifications: for the first, the otologist is little concerned, for the last three, intimately so. My experience with blood transfusions is good; my vaccine experience is not outstanding. I classify as urgent and give precedence to patients presenting

large infected tonsils, when associated with complications. The hypertrophic tonsil patient and the class referred from routine examinations, with little to warrant tonsillectomy from the laryngologist's point of view, report at intervals for check-up. Confinement of three days for the healthy child is sufficient after tonsillectomy; for the debilitated child, a week may be too short. Paranasal sinus infection and pulmonary disease may have the closest relationship and demand strict coordination between the pediatrician, the surgeon, the radiologist and the bronchoscopist. That the condition of the mastoid and middle ear as a focal infection of the upper respiratory tract is difficult to diagnose is evident. The pediatrician and the otologist must be dependent on each other. Note the cases of improvement after simple myringotomy, and, conversely, the disappointment after a mastoidectomy. No dogmatic rule can be laid down for performing myringotomy; each case should be studied from the pediatrician's and the otologist's point of view, better in consultation. I am opposed to incising the injected drum head and to temporizing with a bulging drum. Hospitals demand bacteriologic examination in every case of myringotomy, owing to the prevalence of pneumococcus type III. Cholesteatomatous ears are not infrequent in children.

DR. H. MARSHALL TAYLOR, Jacksonville, Fla.: Dr. Mitchell lays special emphasis on the importance of antepartum care and its relationship to the normal development of the child. I predict that within the next few years the subject of antepartum influence and antepartum care will receive more attention than ever before for the profession seems to be awakening to the fact that too many things happen to the unborn child. I agree that the care of the child should begin with the care of the mother during or even before pregnancy. Dr. Mitchell says that rickets in the fetus with its deformities is now a well defined entity. From the dentists it is learned that, if there is a deficiency of calcium at the time the tooth buds are formed in the fetus, the teeth will rapidly decay in early childhood and no amount of good dentistry will stop it, because the foundation was not properly laid for good teeth before birth. Many of the research workers in the field of otosclerosis are of the opinion that it develops during intra-uterine life, owing to deficiency in the food of the mother and to various toxemias and focal infections in the pregnant mother, yet up to this time little attention has been paid to the prospective mother who has otosclerosis, with the idea of preventing otosclerosis in the offspring. Dr. R. A. Hetler has written about the interrelationship between the concentration of minerals, vitamins and proteins of the diet and its influence on the metabolic normality. The sooner the pediatrician and the otolaryngologist pay due attention to this line of thought in relationship to the mother and the unborn child, the sooner may some light be thrown on the dark chapter of otosclerosis. It now seems to be recognized that much of the thyroid dysfunction most often called goiter, in many regions of this country, is due to a dietary deficiency of iodine on the part of the mother before the birth of the child. The conditions that have been mentioned seem to call for a closer cooperation between the pediatrician and the otolaryngologist. If more attention is focused on the diet and care of the prospective mother, steps will be taken toward the laying of the proper foundation for the various structures before birth. If this is done, in years to come less may be heard of rickets, dental caries, sinus disease in infants and the lymphoid tendency that predisposes to aural disease.

DR. SIMON L. RUSKIN, New York: Children, particularly those who lose a great deal of nasal secretion or any secretions from the mucous membranes, lose nucleoproteins primarily and after a period of time this loss of nucleoprotein manifests itself in the form of a disturbance of water metabolism. Whether it is a nephrosis or an allergy, there is a pronounced influence on the water metabolism through these losses of nucleoprotein. They manifest themselves primarily as a loss of nucleic acid. The protein elements are apparently restored readily, but the nucleic acid elements are not restored except through the diet. In children in whom there is a deficiency of nucleic acid in the diet, disturbances in water metabolism, such as nephrosis and allergy, apparently appear. Possibly one of the reasons why patients are seen who do badly after tonsillectomy and adenoidectomy or who develop severe attacks of sinusitis after the removal of tonsils and adenoids may be bound up with nucleic acid loss. Deficiency of nucleic acid must be considered before tonsillectomy. Since one of the functions of the reticulo-endothelial system, the lymph glandular system, the spleen and the thymus is apparently the production of an adequate amount of nucleic acid for the growth and development of the child, it appears important to investigate carefully the question of the loss of nucleic acid prior to any surgical attack on the tonsils or adenoids and to consider this loss carefully in all cases in which there is a continuous secretion of mucous membrane, such as sinusitis, chronic nasopharyngitis, rhinitis, an already established allergic condition or gastro-intestinal condition.

DR. EDWARD CLAY MITCHELL, Memphis, Tenn.: Regarding the controversy on paranasal sinus infection, when I was in the army I had a soldier who persistently stated that the rest of the company was out of step. Perhaps Dr. Shea and I resemble that soldier; but our experience obtained by following closely some of these cases for twenty years still leads us to believe that we are right, at least until more definite proof to the contrary is obtained.

GIANT-CELL BONE TUMOR OF COSTAL ORIGIN

PAUL C. SAMSON, M.D.
AND
CAMERON HAIGHT, M.D.
ANN ARBOR, MICH.

Since reference to only nine cases of giant-cell tumors of the rib has been found, the following additional case of this relatively rare lesion is being reported:

C. S., a white woman, aged 31, admitted to the University of Michigan Hospital in February 1934, complained of an enlarging tumor of the second rib close to the right costochondral junction. Two years previous to admission, the patient noticed a small hard nodule in this region. The tumor slowly progressed in size and became more prominent, especially during the six months prior to admission. There was no history of trauma and there had been no pain or tenderness. Examination showed a hard, nodular tumor, 2.5 cm. in diameter, involving the second rib immediately lateral to the costochondral junction and extending into the first and second intercostal spaces. The overlying skin was elevated about 0.5 cm. and was not fixed to the mass. There was no tenderness or redness.

The routine laboratory examination gave normal results and the Kahn test was negative. Detail roentgenographic studies of the rib were reported by Dr. Carleton B. Peirce: "Expanding tumor of second rib, right, proximal to costochondral junction. This proximity suggests probable osteochondroma. Trabeculation and the persistent differentiation of the chondral junction indicates the possibility of a giant-cell bone tumor" (fig. 1).

February 28, the tumor was completely excised under local anesthesia. The costal cartilage was divided 1 cm. mesial to the tumor, and the rib 1.5 cm. lateral to the tumor. The adjacent intercostal muscles were removed with the mass. The tumor was hard and encapsulated, and measured 2 by 3.5 cm. (fig. 2). Convalescence was uneventful. Postoperative irradiation was not given, because the excision was considered complete.

A microscopic examination of the tumor was made by Dr. C. V. Weller. He reported: "After decalcification: Benign giant-cell tumor with marked formation of atypical fibrous connective tissue and osteoid tissue. Many multinucleate giant cells of the usual type. This new growth does not invade the costal cartilage and is not sufficiently cellular to be considered sarcomatous. The cartilage itself shows some proliferation, which is probably not neoplastic. The adjacent muscles and fascia show no neoplasm. If there is any doubt as to the complete removal of the tumor, irradiation is advisable" (fig. 3).

A physical examination and a roentgenogram were made ten months after operation. There was no evidence of recurrence.

From the Department of Surgery, University of Michigan Medical School.

PREVIOUSLY REPORTED CASES

Only nine other cases of giant-cell tumor of the rib have been collected. Six of these have been reported by the surgeons or physicians in whose clinics the patients were treated.[1] Christensen [2] has collected seven cases, of which three are included among the nine known cases. Two of these three cases are on file with the Registry of Bone Sarcoma [3] (the unreported cases of Neil, and of the Memorial Hospital Clinic, New York), and one is reported only as a listed case, since the record has been lost. Two of Christensen's collected seven cases are those of Fort and of Gatewood; the remaining two were subsequently reclassified as osteogenic sarcoma.[4] Geschickter and Copeland [5] have mentioned two cases of giant-cell tumor of the rib, one being the case of Fort and the other that of Hedblom. Clinical abstracts of seven of the nine cases were available and are summarized in the present report.

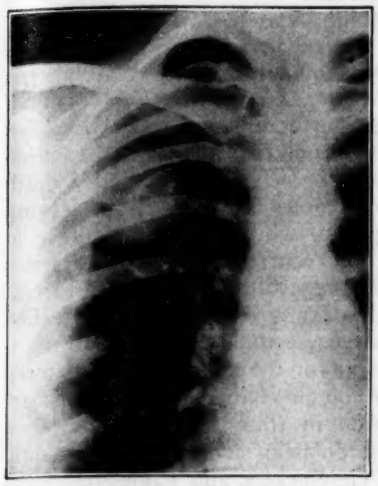


Fig. 1.—Roentgen appearance of expanded tumor of second right rib just lateral to the costochondral junction.

CASE 1.[6]—A. B., a white boy, aged 11 years, had an eight months' history of tumor of the first left rib and clavicle. The tumor had been previously partly excised. July 23, 1913, the first rib, clavicle and a portion of the sternum were removed. Recovery was uneventful. The boy, at the time of the report, had been free from evidence of recurrence for a period of seventeen years.

CASE 2.[7]—S. M., a white boy, aged 9 years, had a small tumor near the angle of the fourth left rib. There was a history of trauma, and a persistent aching pain had been present in the left shoulder for two months. June 13, 1923, exploratory operation and biopsy were done because the neoplasm was believed to be malignant. Postoperatively a "total of 20 gram-hours of radium" is said to have been applied within and outside the wound. The patient was examined eleven years after operation and no evidence of recurrence was found.

CASE 3.[8]—C. H., a white girl, aged 14 years, had a left posterior subcostal pain for one year. A scoliosis had recently developed. A tumor of the left twelfth rib was palpable. Roentgenograms showed an oval enlargement of the rib with central destruction and thinned cortex. Oct. 11, 1921, the entire twelfth rib was removed. Radium was placed in the incision and over the skin for a total of 1,800 milligram hours. The patient showed no signs of recurrence when examined thirteen years after operation.

CASE 4.[9]—H. M., a white girl, aged 16 years, had had dull pain in the left shoulder for one year. On examination there was dulness at the left apex. Roentgenograms showed an enlarged, cystic first rib, from the undersurface of which a bony tumor appeared to extend into the thorax. The treatment consisted of three applications of "radium packs." Coley's toxins were injected. Subsequent roentgenograms revealed progressive diminution in the size of the rib and tumor, and recalcification; all active destruction of bone ceased. The patient was examined seventeen years later and was symptom free. No tumor was palpable.

CASE 5.[10]—Hedblom has cited a single personal case in his collected series of tumors of the bony thoracic wall. The abstract was furnished posthumously through the courtesy of his associate Van Hazel.[11] Sister A., white, aged 38, had had severe intercostal pain on the right side for three years, only temporarily relieved by resection of the eighth intercostal nerve. Roentgenographic examination showed a localized destructive lesion of the proximal end of the eighth rib. May 19, 1922, a portion of the rib including the tumor was removed. There was no evidence of recurrence after eleven years.

CASE 6.—Peirce [1] of the University of Michigan Hospital, has reported the only case in which there was an apparent malignant change in a giant-cell bone tumor of the rib. H. N., a white youth, aged 17, was struck in the left lower part of the chest posteriorly while playing basketball nine months before admission. One month after the trauma there were increased swelling and pain. Later there was a loss of 20 pounds (9 Kg.), and a dry cough developed. A tumor was palpable over the tenth and eleventh ribs posteriorly. Roentgenograms showed a destructive lesion of the tenth left rib. Irradiation totaling 600 roentgens was given during a four-day period and was repeated one month later. Two weeks after the last treatment the tumor was widely excised, together with the posterior portions of the eighth to the twelfth ribs inclusive, and a portion of the lung which had become adherent to the tumor. Death occurred forty hours after operation. Necropsy showed no evidence of metastases. The pathologic diagnosis was given by Dr. A. S. Warthin: "A combination of osteogenic sarcoma and giant-cell sarcoma, arising in a giant-cell tumor. After decalcification, chondro-osteogenic sarcoma arising in a giant-cell tumor of the rib, infiltrating surrounding tissue."

Fig. 2.—Longitudinal section of the tumor removed at operation in authors' case. The costal cartilage is at the cipher end of the centimeter scale. The costal cortex is thinned but intact. The central portion of the tumor is soft and glistening in appearance and contains small, irregular calcified islands.

1. Fort, R. E.: Excision of the Clavicle and First Rib for Malignant Disease, Surg. Gynec. & Obst. **18**: 696-698 (June) 1914. Gatewood: Sarcoma of the Twelfth Rib, S. Clin. North America **2**: 811-819 (June) 1922. Hedblom, C. A.: Tumors of the Bony Chest Wall: A Study of Twenty-Two Personal and Seventy-Eight Collected Cases Since 1921, Ann. Surg. **98**: 528-545 (Oct.) 1933. Holland, C. T.: The Benign Giant-Cell Tumor of Bone, Brit. J. Radiol. **7**: 227-232 (April) 1934. Peirce, C. B.: Giant-Cell Bone Tumor: A Consideration of the Morphology of This Neoplasm, the Response to Surgical and Radiation Therapy, and Report in Detail of Two Apparently Malignant Cases, Am. J. Roentgenol. **28**: 167-188 (Aug.) 1932. Codman, E. A.: Personal communication to the authors, Dec. 15, 1934.

2. Christensen, F. C.: Bone Tumors: Analysis of One Thousand Cases with Special Reference to Location, Age and Sex, Ann. Surg. **81**: 1074-1092 (June) 1925.

3. Abstracts of these cases were furnished through the courtesy of B. C. Crowell, registrar, Registry of Bone Sarcoma, 40 East Erie Street, Chicago.

4. Bone Sarcoma Registry,[3] cases 125 and 373.

5. Geschickter, C. F., and Copeland, M. M.: Osteitis Fibrosa and Giant-Cell Tumor, Arch. Surg. **19**: 169-271 (Aug.) 1929.

6. Registry of Bone Sarcoma,[3] case 70. Fort.[1] Christensen.[2] Geschickter and Copeland.[5]

7. Registry of Bone Sarcoma,[3] case 307. Neil: Unpublished data. Christensen.[2]

8. Registry of Bone Sarcoma,[3] case 338. Gatewood.[1] Christensen.[2]

9. Registry of Bone Sarcoma,[3] case 346. Memorial Hospital Clinic, New York City: Unpublished data. Christensen.[2]

10. Hedblom.[1] Geschickter and Copeland.[5]

11. Van Hazel, W.: Personal communication to the authors, Jan. 22, 1935.

CASE 7.[12]—O. B., a man, aged 48, had noticed a hard painless swelling of the fifth rib at the costochondral junction six months before examination. Roentgen studies showed an expanded tumor with a well defined thinned cortex. The density was not uniform. The mass was completely excised at operation. There was no evidence of recurrence eleven years later.

CASE 8.—Codman[1] has reported the presence of a specimen of giant-cell tumor of the rib in the Warren Museum, Harvard Medical School. The diagnosis was made by microscopic examination. No history is available.

CASE 9.—The original record of Christensen's seventh case has been lost and so no details are available.

COMMENT

Clinical data on only eight cases, including the present report, are available for discussion. Geschickter[13] has suggested that the rarity of giant-cell tumors of costal origin is perhaps due to the extremely small and relatively inactive epiphyses of the ribs. Giant-cell tumors of the vertebrae are also apparently rare, a total of only twenty-three cases in all having been collected by Lewis[14] and Santos.[15] In the majority of the vertebral cases, cure has followed partial excision. The average age in the rib and vertebra groups is less than that of giant-cell tumors in other localities. Five of the eight patients with costal giant-cell tumors (62.5 per cent) and eleven of the twenty patients with vertebral giant-cell tumors (55 per cent) were less than 20 years of age. Geschickter and Copeland[5] reported that 37 per cent of all their giant-cell tumors in various parts of the body occurred in persons less than 20 years of age; 34 per cent of Coley's[16] patients were less than 20 years of age, as were 31 per cent of Christensen's and 23 per cent of Gross's.[17]

Fig. 3.—Microscopic appearance of the tumor. Section shows the costochondral junction. The cartilage with a proliferating border is seen at the right. The neoplasm shows a fibrous stroma rich in spindle cells. Osteoid tissue is present. Many large, irregular, deeply staining multinucleate giant cells are seen at the periphery of the tumor. (Hemalum-eosin stain. Zeiss Planar, 20 mm. lens.)

In the group of giant-cell tumors of the rib, diagnosis was made by microscopic examination in seven of the eight cases reviewed. In case 4 the diagnosis was made by roentgen examination and by the response of the tumor to irradiation.

In four cases the tumor was posterior to the costal angle. In two the entire first rib was apparently involved, and in two the tumor was at the costochondral junction.

Treatment has been by complete surgical excision in six cases, irradiation in one case, and partial excision and irradiation in one case. The one operative death followed an extensive resection of the thoracic wall for a malignant neoplasm, which apparently arose in a giant-cell tumor. No recurrences have been noted in any of the eight cases, regardless of the type of treatment; the patient with a frank sarcoma, however, died before a possible recurrence could have occurred.

A possible explanation for the absence of recurrence may lie in the histopathologic changes of the neoplasm. Microscopic examination in four cases, including our own, has shown a fibroblastic stroma, predominantly spindle-cell in type. Geschickter and Copeland[5] have found the predominance of such cells to be usual among giant-cell tumors occurring in the small flat bones; they have designated the type as the "spindle-cell variant." Explaining this stroma as the result of a heightened defense reaction on the part of cortical bone, they point out that it occurs early and nearly circumferentially in the small and flat bones. In giant-cell tumors in various other locations, Geschickter and Copeland[5] have reported 20 per cent recurrences.

Opinions differ as to the choice of treatment. If a presumptive diagnosis of giant-cell tumor can be made on the history and roentgen examinations, a carefully regulated series of radiation treatments is perhaps the method of choice.[18] The restraint of growth rather than the complete destruction of the tumor by lethal irradiation is desirable. Such treatment has usually been successful with giant-cell tumors in other locations. Roentgenograms taken during the course of treatment will usually show a decrease in the size of the tumor, cessation of active bone destruction, and recalcification.

Operative intervention may be indicated if the diagnosis remains in doubt or if the prominence of the tumor is sufficiently deforming to require its removal. Chondromas should, if possible, be completely removed, since they usually do not respond to irradiation and since they may become sarcomatous. There is no agreement as to the best treatment of primary sarcoma of the rib. Many roentgenologists believe that irradiation is the method of choice. Many surgeons (Hedblom[1] among others), however, believe that a sarcoma should, if possible, be removed. In three of the cases of benign giant-cell tumor of the rib (Gatewood, Fort, Neil), a malignant growth had been diagnosed before operation. In our case the preoperative diagnosis was "probable chondroma," although the possibility of giant-cell tumor was suggested. Operation was undertaken because of

12. Holland.[1]
13. Geschickter, C. F.: Personal communication to the authors, March 8, 1935.
14. Lewis, Dean: Primary Giant-Cell Tumors of the Vertebrae, J. A. M. A. **83:** 1224-1229 (Oct. 18) 1924.
15. Santos, J. V.: Giant-Cell Tumor of the Spine, Ann. Surg. **91:** 37-43 (Jan.) 1930.
16. Coley, W. B.: Prognosis in Giant-Cell Sarcoma of the Long Bones, Ann. Surg. **79:** 321-357 (March), 561-595 (April) 1924.
17. Gross, S. W.: Sarcoma of the Long Bones, Based on Study of 165 Cases, Am. J. M. Sc. **78:** 17-57 (July), 338-377 (Oct.) 1879.
18. Peirce,[1] Herendeen, R. E.: Roentgen Ray in the Treatment of Giant-Cell Tumors, Am. J. Roentgenol. **12:** 117-125 (Aug.) 1924. Pfahler, G. F., and Parry, L. D.: The Treatment of Giant-Cell Bone Tumors by Roentgen Irradiation, Am. J. Roentgenol. **28:** 151-166 (Aug.) 1932.

the likelihood of future sarcomatous degeneration of the presumed chondroma and because of the disfigurement caused by the enlarging tumor.

SUMMARY

Giant-cell tumors are much rarer in the ribs than in other bones. Only ten cases, including our own case, are known to us. At present it appears that irradiation is the treatment of choice if the diagnosis can be established with certainty. Conspicuous deformity may indicate the surgical removal of the tumor. In the reported series no case of recurrence has been found, whether treatment was by surgical excision, irradiation or both. The prognosis for cure should therefore be good.

THE HAZARD OF THE AUTOMOBILE DOOR HANDLE

REPORT OF SIX SERIOUS INJURIES

SAMUEL McLANAHAN, M.D.
BALTIMORE

Motor vehicles and their annual toll of injuries to pedestrian and passenger alike have received widespread attention. Drastic means have been and are being employed to remedy the many traffic hazards that have in the past contributed so largely to such accidents. Less attention, however, has been paid to the individual vehicle and the mechanism of each injury as it actually occurs. It is true of course that such a thing as "breakable glass" has received legislative condemnation in many states and is rapidly being supplanted by the more dependable "safety glass" and that emphasis has been placed on the use of "blow out-proof" tires. It is also true that attention has been directed in the medical literature toward certain specific fractures, and that these fractures have been named for their association with the automobile. Most noteworthy is the "chauffeur's fracture" of the radius, less often seen in these self-starter days. In addition, reference is occasionally made to the "bumper fractures" of the tibia and fibula, sustained by the pedestrian, and two years ago an article appeared by Topping [1] reporting a number of cases of "traffic fracture of the elbow," a serious injury usually befalling the driver whose protruding left elbow is struck by a passing vehicle.

While attention has been directed occasionally to the types of injury just enumerated, little emphasis has been placed on another group of injuries, those resulting from the hazard of projecting objects on an automobile. Such objects include certain types of lights, ornaments, license plates and, most serious of all, the door handles. Most physicians who have attended numbers of people injured by automobiles can readily recall instances of injury caused solely by these objects, and especially by the door handles. It is my purpose in this communication to direct attention to the present automobile door handle as a very real factor in producing serious and often fatal injury, and to make a plea in the interest of public safety and accident prevention that the automobile industry adopt such changes as may reduce this hazard to a minimum. I report briefly six rather striking cases that have come to my immediate attention, four of which have at some time been under my care. In each instance it is to be noted that the door handle of an automobile has been the agent finally responsible for the gravity of the trauma.

1. Topping, M. C.: Traffic Fracture of the Elbow, J. Indiana M. A. 26: 509-511 (Oct.) 1933.

REPORT OF CASES

CASE 1.—J. F., a white man, aged 25, was admitted to the Union Memorial Hospital on the night of May 1, 1930, seriously injured. While riding a motorcycle he had collided with an automobile, and the door handle of the car had been driven through his skull, burying itself within his head. It had broken off cleanly from its attachment at the door. When examined, he was conscious and mentally alert. There was a wound in the left frontal region from which could be seen to emerge the end of a shiny piece of metal. There was some bleeding from the wound. The left eyeball was ruptured and there was marked extravasation of blood beneath the lids. Roentgenograms (figs. 1 and 2) showed the door handle lying almost completely within the cranial cavity. Operation was performed by Dr. J. A. Weinberg, at that time resident surgeon. The foreign body was extracted and the wound was thoroughly irrigated, debrided, and closed with drainage. On the following day, enucleation of the left eye was performed by Dr. Cecil Bagley. The postoperative course was uneventful except for some elevation of temperature during the first week and prolonged drainage of serous material from the scalp wound. The patient was discharged June 23 with the wound completely healed. There were no neurologic changes. Today he is living and able to work regularly, though, of course, markedly disfigured and without the sight of one eye.

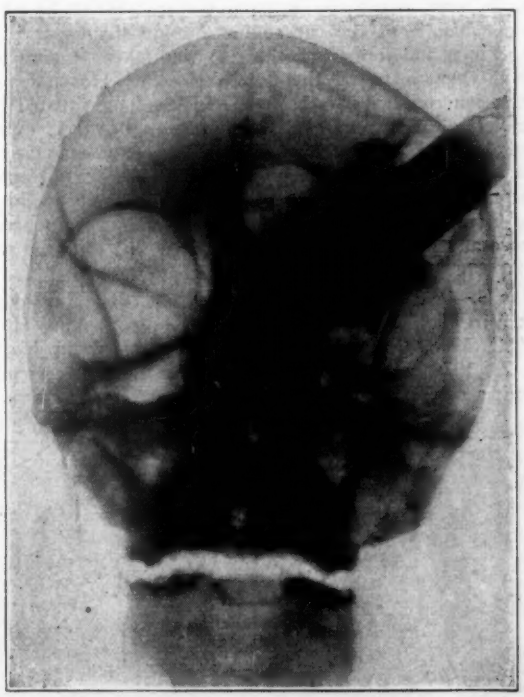


Fig. 1 (case 1).—Position of automobile door handle after it had been driven through the frontal bone.

CASE 2.—M. S., a white girl, aged 11 years, while at play Sept. 16, 1934, rushed out into the street and collided with the side of a passing taxicab. She was thrown to the ground and both she and the cab driver believed that the door handle was responsible for the long deep gash across her chest. A short time later at the Union Memorial Hospital a long, wide-open, deep laceration was found extending from the left border of the sternum at the level of the third rib, across the left side of the chest into the upper portion of the axilla. Wide flaps had been raised on each side. The laceration not only extended through the skin and subcutaneous tissues but included the pectoral muscles and fascia down to the ribs. There was considerable bleeding. Under general anesthesia the wound was thoroughly cleansed and then closed in three layers. Healing was delayed by some slough in the devitalized tissues at the ends of the wound but after four weeks was practically complete. There has remained a rather wide disfiguring scar (fig. 3), which can eventually be excised.

CASE 3.—J. C., a white man, aged 52, was admitted to the Union Memorial Hospital during the night of Aug. 29, 1932, complaining of an injury to his right elbow. He had been walking along a highway on the left side of the road facing traffic. A car passed him traveling at rapid speed, and as it did so the door handle alone struck him, embedding itself in his arm and, needless to say, breaking off from its attachment at the door. Examination at the hospital revealed the right arm in semiflexion and the door handle projecting from the anterolateral surface. It was apparently firmly embedded in the elbow joint. Roentgenograms showed the foreign body wedged between the humerus and the ulna (fig. 4). Subsequent films demonstrated a fracture of the internal condyle of the humerus with some displacement. Under general anesthesia the handle was extracted from the elbow, but not without the application of considerable force, illustrating well the force that must have placed it there and caused the steel to break off. The wound was closed with drainage. Convalescence was complicated only by considerable swelling, and return of function was slow but steady. There remained finally some limitation of flexion at the elbow.

CASE 4.[2]—P. K., a Negro, aged 28, was crossing the street when he was struck by a passing car. He believed that the door handle of the car caught him in the upper part of the abdomen and tore his flesh. He was taken at once to the accident department of the Johns Hopkins Hospital, where examination revealed a laceration 7 inches long situated in the upper left quadrant of the abdomen. In depth it extended through the skin and subcutaneous fat, exposing the thick fascia beneath. The wound was repaired by Dr. Erle Henriksen by means of buried sutures of plain catgut and silk in the skin. Some infection occurred in the wound and drainage persisted for several months. At the conclusion of this time the patient was reported as healed and well.

CASE 5.[2]—K. B., a white man, aged 22, and a resident of West Virginia, was admitted to the Johns Hopkins Hospital April 2, 1935, complaining of a nerve injury in his arm. Nov. 23, 1934, while walking in the street, he was struck by a passing car, which knocked him over and at the same time

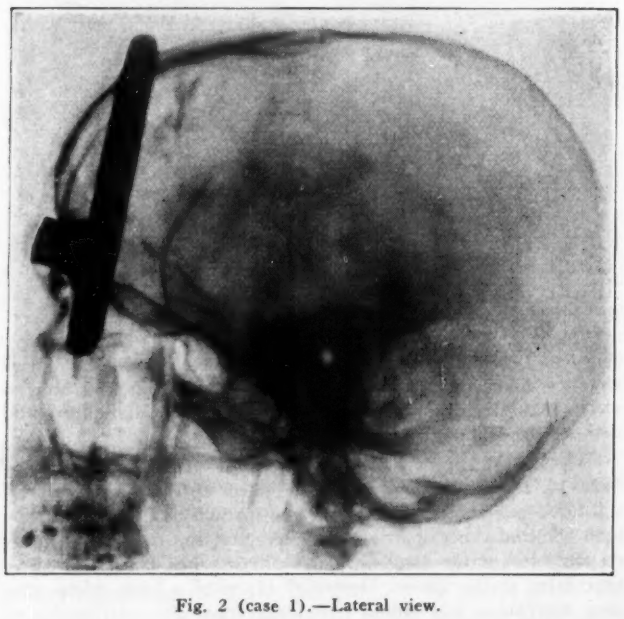


Fig. 2 (case 1).—Lateral view.

injured his right arm. He was unable to move the forearm or the wrist of the right arm and found that the door handle of the car had torn two gashes in his forearm, probably wedging itself between the bones temporarily. The wounds were sutured at once by his physician, who also splinted his wrist, which was said to be fractured. The laceration and the wrist healed satisfactorily, but the patient was still unable to move his forearm or hand. In addition he had lost sensation, he said, over the lower portion of his arm. Examination of the right arm showed muscle atrophy throughout. The hand was rather cyanotic. There were two large scars along the dorsal and ulnar aspects of the forearm, the latter extending down to the ulnar styloid, where the bone was markedly thickened. There was a paralysis of the posterior portion of the deltoid and of

Fig. 3 (case 2).—Appearance of scar on chest, resulting from laceration by door handle.

all the muscles of the upper arm, forearm and hand. The biceps, triceps and finger reflexes were lost. Sensation was completely gone below the middle of the deltoid on the outer aspect of the arm, and below the elbow on the inner aspect. A diagnosis was made of brachial plexus injury, involving all the roots but sparing the cervical sympathetic nerve. No operative treatment was deemed advisable at this time. The patient had sustained an injury that may well mean the permanent loss of the use of his arm.

CASE 6.—W. T. V., a white boy, aged 16 years, was injured May 12, 1935, while crossing a roadway on a bridge. He was sideswiped by a passing automobile, and his right hand was badly torn by some sharp object. Blood was subsequently noted on the door handle of the car. He was taken at once to the Union Memorial Hospital. Examination of the right hand showed an extensive laceration running from the base of the palm at the wrist throughout the length of the palm and on the middle finger. Two shorter lacerations extended from the original point, one running up on each side of the hand. Large flaps were raised between these lacerations, exposing the tendons, but no tendons were seen to be cut. Repair was carried out under general anesthesia by Dr. A. C. Dick. After a week there was some slough at the base of the hand because of deficient circulation in the points of the flaps. By June 8 the granulating wound at this point was ready for small deep grafts, which were placed on it. There had been a marked tenosynovitis throughout, which caused rather acute pain and limitation of motion. With the aid of physical therapeutic measures function is gradually being restored, and it is anticipated that the boy will have a useful hand, though a markedly disfigured one.

COMMENT

These six cases illustrate well the bizarre possibilities of such injuries, and the disfigurement and disability that are possible. Ogilvie[3] has recently reported six other cases of door handle injuries, two of them fatal puncture wounds of the skull. He has well pointed

2. I am indebted to Dr. Dean Lewis for permission to report cases 4 and 5 from the Johns Hopkins Hospital.

3. Ogilvie, H. H.: Automobile Door Handle Injuries, Texas State J. Med. **31**: 9-10 (May) 1935.

out that the elimination of this one source of danger might reduce materially the annual toll of 35,000 deaths caused by automobiles in this country. A casual glance at a row of passing cars cannot but convince one of the potential danger of this projecting piece of metal. In the recent streamlined models is to be seen many a door handle that is little short of a spear—truly a vicious weapon—directed toward any victim who may chance to be in its path. The possibilities of mutilation are easily imagined. It is true that many of the handles are directed toward the rear of the car, because the hinges of the door lie in that direction, and are thus rendered less menacing, though still dangerous projections. Improvements must finally come from automotive engineers. However, there seem to be two requisites for safety: first, a handle (if there must be a handle) without sharp projections, as instanced in the oval ones on certain obsolete models, and, second, a

Fig. 4 (case 3).—Door handle forcibly wedged into elbow joint and broken off from its attachment at the door.

handle that lies either close against or is countersunk within the side of the door. The whole matter has recently been brought to the attention of executives of one of the large automobile manufacturing companies, who have expressed a deep interest and promised earnest consideration. The safety of the person inside the car has been repeatedly emphasized. Now it is time to think more seriously about the person outside the car.

108 East Thirty-Third Street.

Cardiac Patients.—Syphilis should be considered in any case of aortic insufficiency or of heart block developing in an adult. It is not good practice willingly to allow a cardiac patient to call forth his full reserve and consequently to suffer pain, undue breathlessness or fatigue. Those acts, strenuous or leisurely, which bring distress are to be condemned. A cardiac patient is unfit to be on his feet if, when up, he becomes breathless, experiences cardiac pain or quickly tires.—Sir Thomas Lewis, quoted by Fisher, Alexander: Aphorisms in Clinical Medicine, *Canad. J. Med. & Surg.* **77**:166 (June) 1935.

ACUTE SUPPURATIVE GONOCOCCIC TENOSYNOVITIS

WALTER BIRNBAUM, M.D.
AND
C. LATIMER CALLANDER, M.D.
SAN FRANCISCO

Gonorrhea manifests itself in many sites remote from its usual portal of entry, the genito-urinary tract. In the literature there are reports of cases of gonococcic thyroiditis, infection of surgical wounds, laryngitis, tonsillitis, otitis media, dacryocystitis, parotitis and other conditions. One of the most common focal involvements is that of the joints and less frequently of the related bursae and tendon sheaths.

The only references in English to suppurative gonococcic tenosynovitis, especially that involving the flexor tendons of the hand, are brief notations in textbooks. The condition is recorded by Keen,[1] Howard and Perry,[2] Da Costa,[3] Graham,[4] Boyd [5] and others merely in its relation to inflammation of the tendon sheaths in general. There are a few articles in German [6] and in French.[7]

Kanavel [8] has seen only the two patients with gonococcic tenosynovitis mentioned in his book, but he has expressed the opinion that many cases are not recognized or, if diagnosed, are not reported.

It is our purpose in this paper to review the literature concerning acute suppurative gonococcic tenosynovitis and to report two cases. One of these cases was proved and the other was probably of gonococcic etiology.

ETIOLOGY

The primary foci of infection may be the urethra, Bartholin's or Skene's glands, the cervical glands, prostate, seminal vesicles or conjunctiva. It is impossible to determine which of several primary foci acts as the source of dissemination into the blood stream. Focal sepsis without a clinically generalized infection of the blood stream is very characteristic of gonorrhea, the commonest focal infection being so-called gonorrheal rheumatism.[9] This term includes arthritis,

From the University of California Surgical Service, San Francisco Hospital, Unit of San Francisco Department of Public Health, J. C. Geiger, M.D., director.

1. Keen, William: Keen's Surgery, Philadelphia, W. B. Saunders Company, 1922.
2. Howard, Russell, and Perry, Alan: Practice of Surgery, ed. 4, Baltimore, William Wood & Company, 1933.
3. Da Costa, J. C.: Modern Surgery, ed. 9, Philadelphia, W. B. Saunders Company, 1925.
4. Graham, E. A.: Surgical Diagnosis, Philadelphia, W. B. Saunders Company, 1930.
5. Boyd, William: Surgical Pathology, Philadelphia, W. B. Saunders Company, 1929.
6. Dupré: Vulvovaginitis kleiner Mädchen, 1888, quoted by Jundell, J.: Reinzüchtung des Gonococcus Neisser in zwei Fällen gonorrhoischer Metastase, Arch. f. Dermat. u. Syph. **39**: 195, 1897. Aehman, G.: Zur Frage von der gonorrhoischen Allgemeininfection, ibid. **39**: 323-343, 1897. Meyer, Fritz: Verein für inn. Med. **50**: 1051, 1903. Hocheisen: Ein Fall von Gonokokkämie bei einem Säugling mit Blennorrhae, Arch. f. Gynäk. **79**: 414, 1906. Hecht, H.: Ein Fall von Tendovaginitis gonorrhoica, Dermat. Wchnschr. **59**: 1351, 1913. Duncker, F.: Ein Beitrag zur Tendovaginitis gonorrhoica, München. med. Wchnschr. **76**: 1250 (July 26) 1929. Nobl, G.: Sehnenscheidenerkrankungen, in Alexander, G.: Handbuch der Geschlechtskrankheiten, Vienna, A. Holder, 1912, vol. 2, p. 172. Hayward: Chirurgisches Konsilium, Med. Klin. **27**: 1683 (Nov. 13) 1931. Rauschenberger: Ein Fall von Tendovaginitis gonorrhoica, München. med. Wchnschr. **60**: 1828, 1913. Jacobi, E., and Goldmann, E.: Tendovaginitis suppurativa gonorrhoica; ein Beitrag zu der Lehre von den gonorrhoischen Metastasen, Beitr. z. klin Chir. **12**: 827-838, 1894.
7. Pollosson, Maurice: Synovite tendineuse blennorrhagique, Mém. et compt. rend. Soc. d. sciences méd. de Lyon **28**: 58-59, 1888-1899. Tollemer and Macaigne: Remarques sur un cas de synovite tendineuse suppurée des gonocoques, Rev. de méd., Paris **13**: 991-1001, 1893. Macaigne and Finet: Synovite gonococcique secondaire à une balanite, sans blennorrhagie, Bull. Soc. anat. de Paris **69**: 383-387, 1894. Villard, H.; Déjean, C., and Duponnois, J.: Conjonctivite et ténonite Blennorrhagiques métastatiques, Arch. Soc. d. sc. méd. et biol. de Montpellier **11**: 181 (April) 1930.
8. Kanavel, A. B.: Personal communication to the authors.
9. Horder, T.: Metastatic Gonorrhea, Lancet **1**: 1304 (June 30) 1923.

fibrositis, tenosynovitis, bursitis, myositis and perineuritis. By careful technic the gonococcus in many cases can be isolated.[10] In chronic cases, however, it may be so difficult to isolate the gonococcus that the rheumatic condition may be attributed to a so-called gonococcotoxic manifestation, as described by Villard [7] and his associates.

Fritz Meyer [6] cultured gonococci from a flexor tendon sheath of a finger which had been directly infected. The portal of entry was a traumatic lesion.

Acute tenosynovitis may arise also from the direct invasion by many organisms other than gonococci, overaction in working or in sports, metastatic pyogenic infection, influenza, some of the long continued fevers, syphilis, tuberculosis and gout.

More men are affected by this disease than women, the ratio being three to one (Rauschenberger [6]); cases

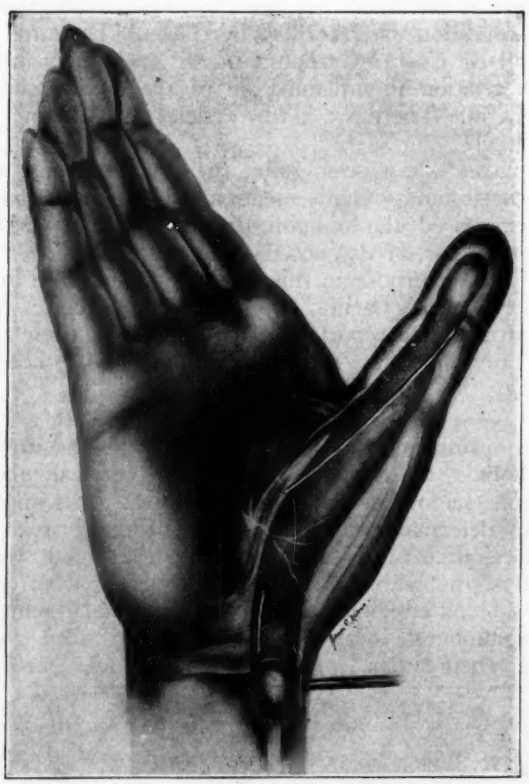


Fig. 1 (case 1).—The infected tendon sheath. The tense swelling of the sheath, the lines of incision and the branch of the median nerve supplying the adductor muscles of the thumb are shown.

in children are rare. Dupré [6] in 1888 reported the case of a 2½ year old girl with gonococcic vaginitis and infection of the extensor tendons of both hands. Diagnostic puncture yielded intracellular diplococci which failed to grow on ordinary culture mediums. Hocheisen [6] isolated gonococci from the joints as well as from a purulent exudate in the tendon sheaths of an infant with gonococcic ophthalmia.

PATHOLOGY

The sheaths of the extensor tendons, especially those of the common extensor tendons of the fingers, thumbs and toes, are affected most frequently. Pollosson's [7] case in 1899 was one of gonococcic tenosynovitis of a tendon sheath in the ankle. There the exudate consisted of a purulent discharge in which floated mucous threads. The walls of the sheath were covered with fungous granulations. A similar case was observed by Macaigne and Finet [7] in 1894.

Gonococcic tenosynovitis may occur in either acute or chronic forms. Acute gonococcic infection in the tendon sheaths usually is characterized by a mild inflammatory reaction with or without effusion. The severe forms produce frank suppuration. With the production of an exudate, an elongated fusiform swelling of the tendon sheaths may appear.

Jacobi and Goldmann [6] and others found that the tendon sheaths were filled with thick hemorrhagic pus. The parietal sheaths were red, moist and velvety. Microscopically there was complete absence of the endothelial layer; in its place was a purulent hemorrhagic network that reached to the tendon. Near the inner surface of the sheath was an areola of blood-filled capillaries. There was diffuse infiltration of the synovial membrane by polymorphonuclear leukocytes and intensive proliferation of various connective tissue elements. The gonococci were found only in the phagocytes close to the inner wall of the sheath.

The tendons may show punctate hemorrhages but rarely are destroyed, as they may be in streptococcic and staphylococcic infections. Complete absorption, formation of adhesions and deformation as well as severe disturbances of function may occur following the serous, seropurulent or phlegmonous processes of the inflammation.

DIAGNOSIS

The diagnosis of gonococcic tenosynovitis is made on the basis of a history of venereal disease and the clinical and laboratory observations. It may be difficult to obtain a history of venereal disease because the patient is unable to appreciate any connection between a venereal infection and a distant manifestation. Kanavel [11] stressed the importance of considering a hematogenous gonococcic infection in cases of tenosynovitis of obscure origin.

The signs of acute suppurative tenosynovitis are essentially the same as those found in staphylococcic and streptococcic infections: swelling, redness, tenderness along the course of the tendon sheath and limitation of motion. Usually neither the local symptoms (such as pain) nor the general reactions (such as fever and leukocytosis) are as great as in the pyogenic type. In all cases spontaneous or provoked pain is extreme and voluntary movements are difficult or impossible. In our cases there was not the board-like rigidity of the affected fingers, but a five to ten degree range of motion was possible before pain was elicited.

In mild cases without evidence of bacteremia it is so difficult to isolate the gonococci that the question arises as to whether the organism is present in a focal lesion or whether the reaction is toxic. The organisms may be present in the recesses of the joints or tendon sheaths and not be obtained by diagnostic puncture.

Twenty-four hours after the onset of tenosynovitis it may not be possible to demonstrate the gonococci by direct smear, but a positive culture may be obtained. After a few days even a culture may fail to show gonococci. Immediate bacteriologic examination is therefore imperative.

Jundell [6] of Stockholm in 1894 investigated an infection involving the extensor tendons of the wrist and ankle. He made a diagnosis of gonococcic teno-

10. Luys, Georges: Gonorrhea and Its Complications, London, Baillière, Tindall & Cox, 1913.

11. Kanavel, A. B.: Infections of the Hand, ed. 6, Philadelphia, Lea & Febiger, 1933.

synovitis by cultivating gonococci obtained from the affected site. He proved it by introducing some of the material into the navicular fossa of the penis of a patient with a brain tumor, thereby producing gonococcic urethritis. A similar procedure was carried out by Aehman [6] in 1897. Blood from a girl suffering from purulent gonococcic tenosynovitis of the anterior tibial tendon sheath was injected into the urethra of a healthy young man. Not only gonorrhea but also gonococcic arthritis of the left foot and right wrist and tenosynovitis of the common extensor tendon sheath of the toes resulted. The pus obtained from this sheath contained many gonococci.

TREATMENT

The treatment of acute suppurative gonococcic tenosynovitis is surgical and consists of establishing adequate drainage. The reports in the German literature of successful results with vaccines and Bier's hyperemia do not warrant withholding surgical treatment. Hecht [6] reported a probable case of gonococcic tenosynovitis in which surgical treatment was not given and healing occurred after injections of vaccine. Duncker [6] presented eighty cases of gonococcic infection of the joints in which there were two infections of the tendon sheaths. These infections were acute and were treated successfully with vaccines. The histories are convincing as to the origin of the tenosynovitis but neither case was proved.

REPORT OF CASES

Two patients with acute suppurative gonococcic tenosynovitis were treated in the University of California Surgical Service of the San Francisco Hospital. Unfortunately, we were unable to obtain complete cultural studies in either case.

CASE 1.—F. O., aged 20 years, was seen on Dec. 31, 1933. One week before admission she began work as an usherette in a local theater. This entailed the constant use of a flashlight during working hours so that she repeatedly flexed the right thumb in pressing the lever. Three days before admission she had progressively severe pain and tenderness in the thumb. On the day of entry the thumb became markedly swollen.

Examination showed swelling of the right thumb, the thenar eminence and the radial side of the wrist. These areas were exquisitely tender to the slightest pressure. Motion of the thumb produced pain, extension more than flexion. The tip of the thumb was not tender. The lumbrical spaces were not swollen. Extreme extension of the other fingers caused some pain. There was no evidence of involvement of the ulnar bursa or of the midpalmar space. The dorsum of the hand was edematous. There was no evidence of the presence of a lesion of the skin.

The patient's temperature was 102 F. The white blood cell count was 13,200 with 85 per cent polymorphonuclear cells. An acute hematogenous infection producing acute tenosynovitis was suspected.

After the application of a tourniquet an incision was made as shown in the accompanying drawing (fig. 1). When the tendon sheath was opened, about 15 cc. of cloudy, thin, purulent material spurted from it. Cultures were taken but became desiccated before bacteriologic studies could be made. An incision was made on the radial side of the wrist, and more purulent material was found. Petrolatum packs were inserted and a plaster splint was applied.

Later a pelvic examination was made for the first time and revealed the presence of urethritis, bartholinitis and endocervicitis. The cervical and urethral smears were loaded with typical gram-negative intracellular diplococci. The patient had an uneventful postoperative course in the hospital and left with the wound granulating well. She received physical therapy over a period of about two months, since which time she has not reported for treatment. A recent letter informed us that she had regained complete function of the thumb.

CASE 2.—E. F., aged 23 years, entered the hospital on May 25, 1934. Five days before entry the lid of a cake box had fallen on her right index finger but had caused no external lesion or any particular pain at the time. Two days later the proximal phalanx became painful and swollen. Later the dorsum of the hand became edematous, and shortly before entry the right arm up to the elbow became painful and showed lymphangitic streaks.

On examination the proximal phalanx of the index finger was found to be swollen, red and tender, but the middle phalanx appeared normal. The lumbrical space proximal to the index finger was swollen and tender. Slight motion of the finger was possible without pain but further motion caused great distress. Pelvic examination revealed the presence of moderate endocervicitis with evidence of a pathologic pelvic condition on the right side. The urethral smear was positive for gonococci. The patient's temperature ranged from 101 to

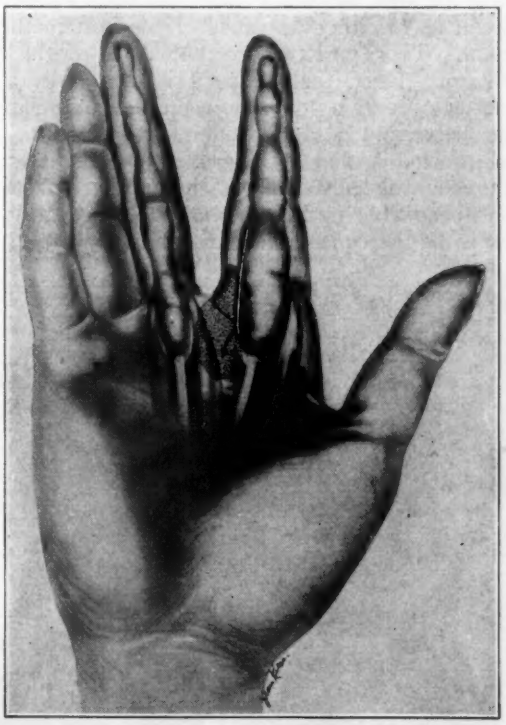


Fig. 2 (case 2).—The infected tendon sheath of the forefinger. The fusiform swelling and the line of incision are shown. The arrows represent the paths of the pus as it escaped through the perforations in the tendon sheath.

102 F., and the white blood cell count was 11,000 with 88 per cent polymorphonuclear cells.

After the application of a tourniquet an incision was made as shown in figure 2. When the lumbrical space was opened about 3 cc. of greenish yellow pus was found. At the proximal end of the tendon sheath were small perforations. Smears and cultures were taken. The smears were positive for gonococci.

The postoperative course was uneventful. The patient was discharged from the hospital four days after entry. In about two weeks the wound had healed completely. The patient, because of some legal entanglement, did not have the benefit of physical therapy. When she was seen on July 23, 1934, the wound was healed, there was a firm scar and the finger was held in rigid extension with almost no active or passive motion obtainable.

SUMMARY AND CONCLUSIONS

Acute suppurative gonococcic tenosynovitis is one of the less frequent metastatic complications of gonorrhea. It is probable, however, that many cases are not reported.

The infection usually is hematogenous and the possibility of a gonococcic origin should be considered in a case of tenosynovitis of obscure origin.

The clinical manifestations are similar to those of the common pyogenic type except that the tendon itself usually is not destroyed.

450 Sutter Street.

THE MEDICAL TREATMENT OF EARLY PELLAGRA

TOM D. SPIES, M.D.
CLEVELAND

Great interest has been centered in the etiology and treatment of pellagra since its initial description some 200 years ago. Literally dozens of specific materials have been recommended as definite cures for this disease, but through the years there has been no uniform agreement as to either its cause or the best method of treatment. There are two main theories of the cause of pellagra: First, that pellagra is caused by a bacterium. However, no one has been able to isolate any specific bacterium and reproduce the disease. The second theory is that it is caused by the lack of a specific chemical substance present in food. Again, no one has been able to isolate this substance and show its lack to be the cause of the disease. One fact, however, is generally accepted; namely, that the mortality rate of severe pellagra is extremely high. For instance, in the Lakeside Hospital, from 1926 to 1930, 54 per cent of seventy-three pellagrins died despite the fact that they were given the best of hospital care.[1] This high death rate is consistent with reports from other hospitals admitting the severe cases.

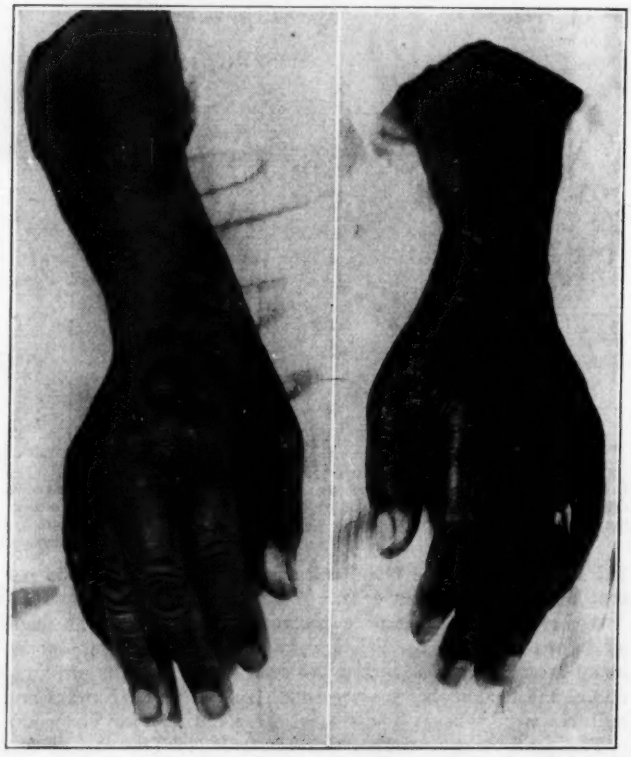


Fig. 1.—Well demarcated characteristic pellagrous lesions of the hands. Note swelling, areas of desquamation, and higher extension of the lesions along the radial portions of the forearm.

During the past five years my associates and I have found certain methods which, when rigidly applied, will reduce the mortality rate in severe pellagra to 5 per cent or less. In deriving this percentage we counted a patient as having died of pellagra even though, in addition to the pellagrous lesions, he had bilateral lobar pneumonia, uremia, carcinoma or some other usually accepted fatal disease. A description of these methods of treatment has recently been published [2] and, while they are effective for the mild or moderately severe case, they are very time consuming and expensive. Here I shall confine my discussion to the treatment of the less severely diseased individual; that is, one without intractable diarrhea, central nervous system changes, or persistent vomiting. After all, the very severely diseased pellagrin is not often seen, for if the disease is recognized early and treated properly it rarely becomes severe. Lay persons must learn that loss of weight and appetite, insomnia and the symptoms of neurasthenia are sufficient grounds to bring one so affected to the physician. At that time the doctor may or may not be able to find diagnostic skin or oral lesions, but an adequate diet, supplemented preferably by at least an ounce of dry brewers' yeast, liver extract or 2 ounces of wheat germ daily, is excellent treatment. These medications, given by mouth, are easily taken and definitely shorten the period of convalescence. It is essential to realize that the yeast and liver extract preparations may vary tremendously in therapeutic efficacy, and for that reason I recommend only the highest grade brewers' yeast purified, assayed, and made highly

Fig. 2.—Pellagrous dermatitis over the fingers and knuckles and around the vulva and anus. Note the symmetry, clear demarcation of the lesions from the adjacent normal skin and the characteristic roughening of the skin in the lesion.

From the H. K. Cushing Laboratory of Experimental Medicine, Western Reserve University School of Medicine, and the Medical Service, Lakeside Hospital.

Read before the Section on Pharmacology and Therapeutics at the Eighty-Sixth Annual Session of the American Medical Association, Atlantic City, N. J., June 13, 1935.

1. Spies, T. D., and DeWolf, H. F.: Am. J. M. Sc. **186**: 521 (Oct.) 1933.
2. Spies, T. D.: The Treatment of Pellagra, J. A. M. A. **104**: 1377 (April 20) 1935.

palatable and digestible by reputable laboratories. Likewise, the liver extract should be of known strength, made and assayed by reputable concerns. The use of an inferior therapeutic material may fail to remit the disease. Prompt treatment of prodromal symptoms is followed by a desire to eat, the ability to sleep, and a general feeling of well being.

Oftentimes, however, the patient is not seen by the doctor until definite lesions of pellagra are obvious. Some of the early cutaneous manifestations of the disease can be seen in the accompanying illustrations. As I have shown, early recognition of such lesions, good general care of the patient, and the specific use of antipellagric agents produce rapid amelioration of the signs and symptoms. Patients whose symptoms have been progressing for some time but who have not developed the persistent vomiting, the intractable diarrhea or the central nervous system changes of severe pellagra can be treated effectively by a well balanced diet of 4,000 calories or more each day and adequate rest. At times such patients recover with this care alone, but it is always wise to supplement the diet with a good brewers' yeast, wheat germ or liver extract. Each must be given in large doses, and only the good products should be used. The wheat germ and yeast have the advantage of being much cheaper than the liver extract. The various yeast products are not equally efficacious, some of them being more potent and more palatable than others. Any one of these agents is best given in doses of from 10 to 20 Gm. in a glass of iced milk or iced eggnog, at intervals of three or four hours until the patient receives a total of 75 to 100 Gm. daily. The specific care of pellagra is most successful when one resorts to parenteral injection of liver extract, from three to five doses of 20 cc. daily, and the simultaneous oral administration of large amounts of brewers' yeast or wheat germ. When stomatitis and glossitis are present and adequate therapy has been administered, the condition of the mouth rapidly improves.

Although tincture of opium, 2 cc. up to 5 or 6 cc. daily, may be used in the treatment of diarrhea, it is not usually efficacious. Diarrhea ceases only when the patient is cured of pellagra. Treatment must be carried on despite abdominal pain or vomiting. Sometimes a large sedative relieves these conditions and enables the patient to rest better. If the disease has not progressed too far, the involvement of the nervous system is relieved without specific therapy. The skin lesions of pellagra improve rapidly whenever suitable general therapeutic measures are applied. Mild antiseptics, such as potassium permanganate in 1:5,000 solution, used as soaks are often beneficial.

When the patient looks and feels better, gains weight, has a desire to eat and ingests a large and well balanced diet, he is on the road to recovery. It is important, however, that he be watched for a period of at least two to three weeks to make certain that there is not a relapse. Even after that, special attention must be given to afford protection to these patients, who have such predisposing conditions as poverty, chronic alcoholism, acute and chronic infectious diseases, poor teeth, diabetes, dietary idiosyncrasies, and diseases of the gastrointestinal tract.

SUMMARY

I have shown some methods that have been proved effective in the treatment of mild and moderately severe pellagra. For the best results it is essential that the physician pay careful attention to the general hygiene and food intake of the patient, and that he employ judicious care in the selection and use of specific therapeutic agents.

2065 Adelbert Road.

ABSTRACT OF DISCUSSION

DR. HENRY L. BOCKUS, Philadelphia: In the few cases of pellagra that I have seen in Philadelphia there is usually evidence of some other deficiency in addition to the pellagroid syndrome. I have reviewed the last six cases admitted to the Graduate Hospital. The common factor was alcohol and a pellagroid syndrome. Three of these patients had a true achylia after a histamine test meal, two an achlorhydria without histamine and one a marked hypochlorhydria, so that in the alcoholic pellagrins a deficiency in gastric secretion is to be expected and may be partially responsible for the multiple manifestations of deficiency so often present. In one case there was an associated scurvy, in another extreme hypoproteinemia and polyneuritis. The onset in a third case was ushered in with gastro-enteritis and there was a concomitant hypochromic anemia and portal cirrhosis. The fourth case presented dysphagia, hypochromic anemia and achylia, closely resembling the so-called Plummer-Vinson syndrome. The initial phenomena in the fifth case were extreme diffuse inflammation of the mucous membranes and nervous manifestations. The sixth case was complicated by an alcoholic neuritis and wrist drop. A survey of this small series of alcoholic pellagrins indicates a difference in the character of onset and in the systems primarily involved, although the pellagroid syndrome eventually emerged and seemed predominant. I would make a plea for individualization in management, supplying in each case ample utilizable agents to bolster up the various deficient factors that are encountered—vitamin, liver, desiccated hog stomach, hydrochloric acid, proteins, calcium, iron, and so on. Large doses of liver parenterally, as recommended by Dr. Spies, and blood transfusions seem to be of most value in the extremely ill patient. A final word of caution concerning the development of pellagra in a nonalcoholic patient outside the pellagra belt: one must be sure to eliminate obstructing and ulcerating lesions in the gastro-intestinal tract.

DR. W. H. SEBRELL JR., Washington, D. C.: It was first demonstrated in the laboratory in which I work, in experiments on dogs, that liver extract contained the pellagra-preventive factor. There have been several workers in this country who have reported almost uniformly successful results with the use of liver extract in the treatment of pellagra. I think, however, that Dr. Spies has studied this phase of the subject more thoroughly perhaps than any other man in the country. There are just one or two things that I should like to emphasize about the treatment of pellagra with liver extract. One is the cost of treatment by using the large amounts of liver extract recommended by Dr. Spies. That is a factor to be considered. I do not mean to say that one should not use liver extract. If the patient can afford it, it is very good to use. However, dried yeast is very effective and relatively cheap and should, I think, be given serious consideration. In addition to this, as Dr. Spies himself has emphasized, the diet should be improved at the same time. After all, that is the essential point. If the patients leave the hospital and go back to the deficient diet on which they develop pellagra, they will more than likely have pellagra again the next year. The individualization of treatment is another very important point, which Dr. Spies also mentioned. The patient must be watched closely and the physician himself must see to it that he actually gets the prescribed diet and medication.

DR. L. K. RIGGS, New Brunswick, N. J.: There seems to be rather a wide margin between the observations of the experimental laboratory and the clinical application. I think that the reason for this is the rather sudden, dramatic effects that can be obtained in all sorts of deficiency conditions which are produced in the laboratory, because the essentials in the laboratory experiment are generally controlled, while various clinical factors which are contributing to the laxness of certain vitamins are frequently due to the fact that the controlling

factor has been either neglected or forgotten, the great factor of the otherwise adequate diet. I don't suppose that any subject of vitamins has been given more general discussion or more conflicting opinions than the so-called vitamin B_2 or vitamin D. This whole thing has been made cloudy by the too general use of the word pellagra. To evaluate clinically or otherwise one of the vitamins, there is one great, important thing which must be taken into account, the remainder of the diet. It has recently been shown in my own laboratory that animals which develop vestibular disturbance due to lack of vitamin B_1 are readily cured by doses of a certain amount of a vitamin B_1 preparation. If, however, those animals were previously on a very low, minimal amount of vitamin B_2 or B_3, it takes a larger amount of vitamin B_2 to cure that condition. But if the reverse is true, that amount of the animal fat which is necessary to effect amelioration depends on the remainder of the dietary requirements.

DR. A. A. HEROLD, Shreveport, La.: I am glad to hear Dr. Bockus refer to the "syndrome of pellagra"; in Louisiana, where a great deal of it existed a number of years ago, it came to be called a "symptom complex" rather than a disease; by that I mean that some patients have one manifestation and some another, while others have several, and I have seen it develop as a terminal stage of wasting diseases. It is known that, through the education which has been carried on, if the milder cases are treated with the proper food, including the vitamins that are missing, they can be cured easily. But what is one going to do for the patient who is bedridden, whose tongue looks like raw beef, whose saliva is constantly dribbling because the throat is so swollen that he cannot swallow, and whose bowels are acting twenty, thirty or forty times a day? There were many such cases as these about twenty years ago in our territory comprising certain portions of Louisiana. At that time the late Dr. Goldberger of the U. S. Public Health Service was making his investigations; he told me that there was something lacking in the diet. He did not know exactly what it was, but he thought that it was of a protein nature. About that time I had such a case. The patient wouldn't or couldn't swallow; she was practically hopeless. I figured that there was something needed and needed quickly. Investigators had shown that the coagulation time of the blood is lengthened in pellagra. In trying to find something that would supply protein quickly and at the same time accelerate the coagulability of the blood I decided to use normal horse serum, which can always be readily secured. I obtained surprisingly favorable results in this and other cases and I reported this method, which is now used in some hospitals, in a paper read before the Louisiana State Medical Society. I do not claim that this is a specific for pellagra, but I do claim that it will tide over patients who are severely ill.

DR. RUSSELL L. HADEN, Cleveland: Dr. Spies has shown me from time to time his interesting patients discussed here today, so I can testify from first-hand observation as to the dramatic results he has obtained. I should like to emphasize that Dr. Spies has dealt with these patients in large numbers and has reduced the mortality in one single hospital from 54 per cent to 5 per cent. Nothing could prove better the value of the treatment that he has instituted.

DR. TOM D. SPIES, Cleveland: I have nothing to add to what has been said. I think that probably one of the most significant things, from the standpoint of the future in the work, is brought out in the statement by Dr. Riggs about the difference between the laboratory observations and the clinics. I hope I did succeed in what I am trying to portray today. I trust that it will be accepted as something worthy of consideration and that these methods will be applied to the mild cases. In regard to the severe cases, I would appreciate very much having a reprint of Dr. Herold's article, for I don't know whether horse serum is better or not; I have never used it. If it is better, I am all for having it.

Materials Rich in Vitamin B.—Wheat germ and yeast are perhaps the richest in vitamin B of the materials ordinarily available.—Sherman, H. C.: Food and Health, New York, Macmillan Company, 1934.

Clinical Notes, Suggestions and New Instruments

A NEW METHOD OF STAINING BLOOD PLATELETS

R. B. H. GRADWOHL, M.D.
Pathologist to St. Louis County Hospital
ST. LOUIS

The method described here is a modification of that described by Fonio. Reagents used in the technic are as follows:

Fourteen per cent magnesium sulphate solution. Dissolve 14 Gm. of chemically pure magnesium sulphate in enough distilled water to make a total of 100 cc. Filter through filter paper.

Methyl alcohol. Uniformly good success has been obtained with the methyl alcohol furnished by the National Aniline Company, and other brands now on the market have failed to give equal success. It is for that reason that I specify the use of National Aniline Company methyl alcohol. The alcohol used in fixing blood platelet smears should be labeled "for blood platelet counting." It must not be used for fixing blood films.

Giemsa stain. I recommend the Giemsa stain that the Gradwohl Laboratories have prepared for this purpose, following Professor Giemsa's original formula.[1]

Neutral distilled water. For the testing of neutral distilled water, the following method is advised:

Pick up a few crystals of hematoxylin with a pair of metal forceps and place in a glass test tube. The tube should be neutral and contain no traces of acid or alkalis.

Add about 5 cc. of the distilled water to be tested to the hematoxylin crystals.

The water will turn yellow, pink, or a deep purple.

If it turns to a pink color between two and five minutes, the water is neutral.

If it becomes pink before one or two minutes, the water is alkaline.

If it remains yellow for five minutes or longer, it is acid.

In neutralizing acid water, use 1 per cent sodium or potassium carbonate solution.

In neutralizing alkaline water, use 1 per cent hydrochloric or acetic acid solution.

The neutralizing agent is added to the water a drop at a time; the mixture is shaken after the addition of each drop, and then the water is tested with hematoxylin crystals.

About 2 liters of water may be neutralized at a time.

It is well to test water each day, since sometimes it becomes acid or alkaline on standing.

Fresh distilled water should be prepared every few days to insure good results.

Rubber connections on the water bottle should not be used, since the rubber from the tubing causes changes in the water that interfere with the staining.

TECHNIC

Immerse the patient's hand in a pan of hot water to produce hyperemia. Wipe the skin dry with a clean piece of sterile gauze. Place 1 drop of magnesium sulphate solution on the end of the finger and puncture through the drop. Allow the blood to ooze through the magnesium sulphate solution until there is a mixture of about 1 part of blood and 9 parts of magnesium sulphate. Mix with the needle point. Pick up a drop of the mixture and place on a fat-free slide. Smear with a cover glass as for a blood film. The cover glass should be narrower than the slide so as to obtain margin-free smears. Fix in methyl alcohol for five mintes (in a Koplin jar).

Wash thoroughly in neutral distilled water to remove any remaining traces of magnesium sulphate solution.

Prepare diluted Giemsa stain by adding 5 drops of Giemsa stain to 5 cc. of neutral distilled water, shaking slightly after the addition of each drop. Do not shake too vigorously.

Flood the slide with the stain on a staining bridge for thirty minutes.

1. Deutsche med. Wchnschr. **31**: 1026, 1905.

Wash in neutral distilled water.

Flood the slide with dilute fresh Giemsa stain and restain for thirty minutes.

Wash in tap water, dry and examine.

METHOD OF MAKING COUNT

Count all the erythrocytes and blood platelets in consecutive fields until 250 erythrocytes have been counted. Count four such fields after the four-field meander method.

Calculate the number of blood platelets in 1 cu. mm. of blood by the following formula:

$$\frac{\text{Patient's red count}}{1{,}000} \times \text{number of blood platelets counted} = \text{number of blood platelets in 1 cu. mm. of blood.}$$

EXAMPLE

One thousand red blood cells are counted. Sixty-five blood platelets are counted. Patient's erythrocyte count, 5,000,000.

$$\frac{5{,}000{,}000 \times 65}{1{,}000} = 325{,}000 \text{ blood platelets in 1 cu. mm. of blood.}$$

Normal, from 250,000 to 300,000 per cubic millimeter.

With the Fonio method there is often precipitation of the Giemsa stain, which constitutes a confusing factor in making this count. With the method described, I have eliminated this precipitate and have no difficulty in making a blood platelet count.

This method of staining also gives a deeper stain of the blood platelets, which is highly advantageous in this procedure.

3514 Lucas Avenue.

TRAUMATIC FRACTURE OF PENIS

HAMILTON W. McKAY, M.D., AND G. AUBREY HAWES, M.D.
CHARLOTTE, N. C.

In reviewing the literature of penile injuries, one is greatly impressed with the paucity of case reports, which indicates that either the penis is seldom injured or that physicians do not consider such cases important enough to report. In the World War, Young recorded only forty-three penile wounds among the American forces. This is an astounding statement, when one considers the exposure of the penis to accidents, vicious attacks, and occasional perversions. Many of the recent textbooks on urology merely refer to fracture of the penis without discussing its diagnosis, treatment and prognosis. Traumatic rupture of the corpora cavernosa is considered ridiculous and unheard of by many members of the medical profession. Rupture is rare but can cause serious complications. The gravity of the injury depends on whether the urethra is injured or compressed by a blood clot causing urinary retention, or whether extensive rupture of the erectile tissue has taken place. If the rupture is extensive, the resultant scar tissue and contraction may cause a lateral deformity of the penis, which causes pain and interference with coitus.

PATHOLOGY AND ANATOMY

The lesion consists of a tear in the fibrous sheath of the corpora cavernosa. The tunica albuginea is a tough, dense fibro-elastic sheath, which encircles the corpora cavernosa. This sheath is composed of two layers of fibers, an inner concentric layer and an outer longitudinal layer. From the inner layer arise numerous fibrous septums forming irregular spaces or areolae, which form the supporting framework for the blood vessels. The erectile tissue of the penis is known as the corpus spongiosum and consists of the bulb, body and glans. External to the corpora cavernosa is Buck's fascia, which binds all the structures together.

DIAGNOSIS

Diagnosis is not difficult as a rule. The patient usually gives a history of an unusual penile injury during erection. On physical examination there is marked edema and bluish discoloration, which extends to the scrotum, and a lateral deformity of the penis opposite the injured side. One can usually palpate the tear in the fibrous sheath.

TREATMENT

The consensus is that conservatism rather than radical procedures should be employed. First the patient should be catheterized to determine whether the urethra has been injured and, if so, whether a blood clot has occluded the lumen. If the urethra is injured, one should proceed in the usual manner for treatment of urethral trauma, which is not considered in this report. On the other hand, if a blood clot is obstructing the lumen of the urethra a small incision should be made, the clot removed, and the bleeding points ligated.

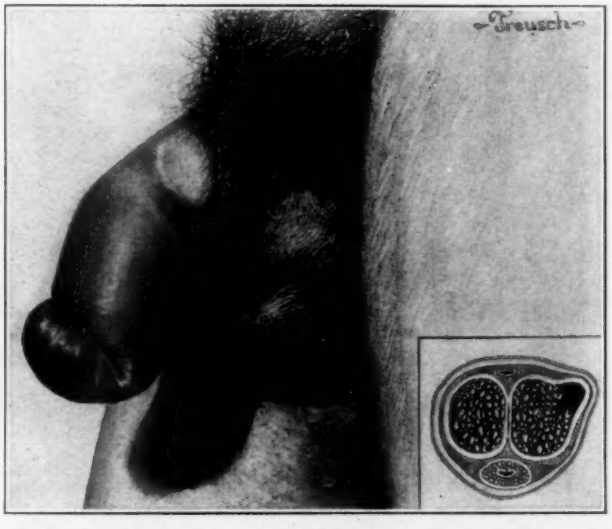
When the urethra is not injured, either cold or hot compresses and sedatives usually suffice. If the effusion continues, the bleeding vessels should be ligated and the sheath sutured.

PROGNOSIS

The prognosis depends on the extent of the rupture. If the urethra is not damaged, and the rent in the sheath is small, the parts usually return to normal. If more extensive, the prognosis should be guarded, in view of the resultant cicatrix and deformity.

REPORT OF CASE

C. G., a white man, aged 30, married, was seen Nov. 3, 1934, in an excited, worried state. At 7 a. m. he awoke with an erection of the penis. When he turned over in bed, the penis "stuck in" the mattress and he thought that it "broke," because



Reproduction of drawing from photograph as the penis and scrotum appeared when patient was first seen, showing marked edema of the entire penis, especially the foreskin; also the firm swollen area on the left lateral surface of the base of the penis. The inset is a cross-section, through the fracture area, showing the accumulation of old blood in the left corpus cavernosum.

it sounded like the breaking of a corn stalk and was followed immediately by severe pain. The entire penis soon became edematous and assumed a bluish red discoloration, which extended throughout the scrotum. There was no history of gonorrhea or syphilis.

Physical examination was essentially negative, except for the external genitalia. The penis was enormously swollen and edematous, and was bent to the patient's right. The organ was bluish red, which coloration had extended throughout the entire scrotum, owing to the escape of blood into the subcutaneous tissue.

The patient voided urine with some difficulty, but no macroscopic or microscopic blood was present, indicating that the urethra was intact. On palpation one could feel a hard nodular mass, unquestionably a blood clot, located in the left corpus.

Examination of the urine gave negative results throughout.

Blood counts gave normal results except that the leukocytes numbered 11,250. Hemoglobin was 95 per cent.

Since the patient was able to void urine and there was no hematuria present, catheterization was not deemed necessary. For the first two days, treatment consisted of hot boric acid steams to the penis and scrotum. On the third day a small incision was made over the blood clot and the clot partially

removed. During the next week the treatment consisted of hot boric acid steams for thirty minutes twice a day.

Ten days after the patient was first seen the penis and scrotum had practically returned to normal, only a slight bluish discoloration remaining. He states that when an erection occurs there is no lateral deformity and very little pain at the site of injury.

201 Medical Arts Building.

NONSURGICAL REATTACHMENT OF IRIS IN A CASE OF TRAUMATIC IRIDODIALYSIS

VIRGIL J. SCHWARTZ, M.D., MINNEAPOLIS

S. K., a boy, aged 12, suffered an injury to the left eye on July 4, 1929. A small torpedo exploded, causing a large iridodialysis above. The iris was torn from its attachment superiorly to the ciliary body for a distance of 6 or 7 millimeters, forming the customary D shaped pupil, the flat side being, of course, above. There was some blood at the bottom of the anterior chamber. The fundus was not visible and the visual acuity was reduced to light perception. Instillations of atropine 0.15 Gm., cocaine 0.5 Gm., in distilled water 15 cc., were given. In addition, the eye was bandaged, the patient was put to bed and warm applications were ordered. The pupil responded promptly by dilating well, the iris being pushed well toward the periphery of the anterior chamber immediately. After

Iris completely reattached to ciliary body. The separation extended a distance of 6 or 7 mm. across the upper part of the anterior chamber.

forty-eight hours the dilatation was not so complete as desired; therefore, a 2 per cent solution of atropine was substituted for the first, and this was used only twice a day, because the patient was having considerable pain and the instillations aggravated this discomfort.

On the night of July 7 the patient experienced a sudden severe pain in the left eye, and on inspection it was found that a fresh hemorrhage had filled the anterior chamber. It was a question whether or not there was a hemorrhage in the posterior segment, since it was impossible to see behind the lens from the beginning. For this reason it was not known whether there was a hemorrhage into the vitreous, a detachment of the retina, or whatever else may have transpired. July 8 the blood in the anterior chamber became largely absorbed, and during the succeeding week all the extravasation disappeared. A red reflex began to appear in the interior of the eyeball on illumination, although the fundus could not be distinctly made out. Some days later the patient was able to count fingers, but it was also becoming apparent that one edge of the lens had been ruptured by the original injury and that opacification was beginning. This gradually increased. July 30 it was possible to make out a fairly large, dark hemorrhagic mass below and nasally in the vitreous. This probably represented the remains of a former vitreous hemorrhage. August 23, long after atropine had been discontinued, it was evident that the iris had become completely reattached where it had been torn away from the ciliary body above. This condition has not changed since that time. It might be well to mention, although it is not pertinent to the subject in question, that a complete cataract developed. This was needled in July 1934, and the patient now has a clear pupil, clear media and a normal fundus.

Considerable importance attaches to this case because of the fact that reattachment of an iris once torn away from the ciliary body has usually been regarded impossible. Fuchs and other authorities have held this view. Operations have been devised for drawing the torn iris margin outward and suturing it in such a manner as to reunite the separated edges, but I believe this is a difficult and not altogether satisfactory procedure. However, I can readily see how it might sometimes be advisable, if spontaneous reattachment does not occur, and if the dialysis is in a zone that is not covered by the lids when the eyes are open. Monocular diplopia is apt to be a very distressing symptom in such conditions, and for this reason some operative procedure may have to be attempted. A few years ago Shedlov[1] reported a similar case of spontaneous reattachment. Aside from this I know of no other authentic instance, although there may be some.

617 Medical Arts Building.

CINCHOPHEN POISONING, WITH AUTOPSY

REPORT OF A CASE DUE TO CINSA-VESS

SAMUEL PELUSE, M.D., CHICAGO

Fatal cinchophen poisonings due to various proprietary preparations have been reported quite extensively by Johnson,[1] Weir and Comfort,[2] Parsons and Harding,[3] and others in the recent literature. The case I am reporting is prompted by the peculiar circumstances involved in the patient's death, and by the fact that the preparation consumed is a rather recent addition to the proprietary cinchophen compounds.

Cinsa-Vess, an effervescent tablet containing as its essential ingredients 5 grains (0.3 Gm.) of cinchophen and 1/200 grain (0.0003 Gm.) of colchicine, appeared for the first time on record in the files of the Council on Pharmacy and Chemistry in November 1930.[4] The patient consumed thirty tablets of this product over a period of three months prior to the first signs of jaundice, a quantity equivalent to 150 grains (10 Gm.) of cinchophen and one-sixth grain (0.01 Gm.) of colchicine.

REPORT OF CASE

History.—Mrs. N. B., aged 37, white, widowed, was admitted to the Mother Cabrini Hospital, Oct. 9, 1934, accompanied by her family physician, Dr. Salvatore Mirabella. The following history was obtained: For the past five weeks she had experienced cramplike pains in the right upper quadrant of the abdomen, and these attacks had become increasingly severe. Four weeks previously she became aware of a yellowish discoloration of her skin and this had progressively deepened in intensity. Her stools were gray at the time of admission, and the urine was very dark brown.

The past history was essentially negative, except for repeated attacks of epigastric distress, especially after eating fatty foods.

The physical examination revealed that the patient was well developed and well nourished, and intensely jaundiced with icteric sclerae, and that there was marked tenderness in the upper right quadrant of the abdomen on palpation. The temperature was 97.6 F., the pulse 92, and the respiration rate 24.

The routine laboratory work done on admission was as follows: hemoglobin, 80 per cent; erythrocyte count, 4,210,000; color index, 0.9; white blood count, 12,000; differential white count: small lymphocytes 10 per cent, large lymphocytes 2 per cent, and polymorphonuclear leukocytes 88 per cent. Coagulation time, with a modified Sabrazes method, revealed no coagulation in sixty minutes. Bleeding time, with Duke's method, was complete in thirty minutes. The van den Bergh test resulted in an immediate indirect positive reaction. The blood

1. Shedlov, Abraham: Traumatic Iridodialysis with Complete Reattachment of the Iris, J. A. M. A. **83**: 1507 (Nov. 8) 1924.

From the Department of Surgery, University of Illinois College of Medicine.

1. Johnson, E. T.: Cinchophen Poisoning: Report of a Fatal Case, J. Missouri M. A. **3**: 22-24 (Jan.) 1933.

2. Weir, J. F., and Comfort, M. W.: Toxic Cirrhosis Caused by Cinchophen, Arch. Int. Med. **52**: 685-724 (Nov.) 1933.

3. Parsons, Lawrence, and Harding, W. G.: Fatal Cinchophen Poisoning: Report of Six Cases, Ann. Int. Med. **6**: 514-517 (Oct.) 1932.

4. Communication from the Council on Pharmacy and Chemistry and the Bureau of Investigation.

Wassermann reaction was negative. The urine showed a moderate amount of albumin; bile was present in large quantities; there were many pus casts, many pus cells and many renal epithelial cells.

The treatment instituted was symptomatic with the addition of intravenous administration on alternating days of calcium gluconate, 10 cc. of a 10 per cent solution, and 50 cc. of a 50 per cent solution of dextrose. Under this regimen, after a period of four weeks, the coagulation time had dropped to fifteen minutes and the bleeding time to twelve minutes.

Clinical Course.—During the first week in the hospital, the patient was seized with daily paroxysms of pain in the right upper quadrant of the abdomen, associated with abdominal distention, but these were relieved readily by the usual therapy. The jaundice progressively increased in intensity.

In the second week, definite signs of ascites were elicited. The jaundice at this time, when viewed in good daylight, took on a peculiar, golden-yellow shade, quite different from any jaundice with which we were familiar. This "golden tint" was most pronounced on the forehead and upper eyelids.

During the third week a progressive edema of the lower extremities developed, extending to the hips; this persisted to the end.

In the fourth week the ascites was marked, causing the patient respiratory distress, while the paroxysms were more intense and increasing in number. In this week, on November 6, we were accompanied by one of our colleagues, Dr. Andrew Sullivan, on our ward-walk, and he immediately recognized the patient's clinical picture as one due to cinchophen poisoning.[5] The patient admitted, for the first time, that she had consumed Cinsa-Vess, giving us our first clue to the possible etiologic factor.

On November 11, in the fifth hospital week, I gave the patient a transfusion of whole blood, using the Scannell apparatus. After 200 cc. had been administered the patient started to cough and showed signs of distress. The transfusion was stopped immediately. The patient, however, became practically pulseless almost at once and failed to rally in spite of the stimulants and restoratives administered.

Autopsy.—On examination the body was about 5 feet 2 inches (157.5 cm.) in length, weighed about 140 pounds (63.5 Kg.), and was not in rigor mortis. There was hypostasis in the dependent portion and pitting edema of the lower extremities up to and including both hips.

In the chest there was found about 1 quart of heavily bile-stained, serous fluid in each pleural cavity. In the abdominal cavity there was about 10 quarts of a similar fluid.

The liver weighed 580 Gm. On gross examination the external surface was irregular, due to variously sized, elevated, yellow-brown nodules. A cut section showed variation in color, periphery of yellowish brown, and central portions of purplish red. Microscopic examination showed a marked absence of hepatic cells, the areas being replaced by a granular débris, in which were interspersed many biliary ducts. There was a general invasion of the tissue by polymorphonuclear leukocytes and lymphocytes. Areas of small nests of hepatic cells in various stages of degeneration were noted. Retention of bile pigment was present. Other areas showed a tendency of beginning fibrosis. The laboratory diagnosis was acute yellow atrophy of the liver.

COMMENT

The immediate cause of death in this case was, no doubt, the effects of the blood transfusion. Clinically, the patient presented the picture of "anaphylactoid shock," most likely due to the inability of the damaged liver to handle the serum protein of the donor.

The files of the Council on Pharmacy and Chemistry, as well as those of the Bureau of Investigation,[4] up to the present time, contain no record of any fatalities caused by Cinsa-Vess. This death, in all probability, is the first recorded from the effects of this compound.

1200 Gilpin Place.

5. Dr. Andrew Sullivan had recently survived a toxic jaundice due to cinchonism and was thoroughly conversant with the signs and symptoms of cinchophen poisoning, as well as with the cinchophen proprietary preparations.

HEMOLYTIC ACTION OF CEVITAMIC (ASCORBIC) ACID

HAMILTON H. ANDERSON, M.D., AND C. D. LEAKE, PH.D.,
SAN FRANCISCO

It has been recommended[1] that cevitamic acid, when administered parenterally, be dissolved in distilled water and neutralized with one-half its quantity of sodium bicarbonate in order to avoid tissue sloughing. Another note of caution appears to be warranted in connection with its intravenous use. A patient was given 100 mg. of cevitamic acid N. N. R. dissolved in 10 cc. of sterile distilled water by vein and had a chill immediately after the injection, followed by fever and general discomfort. The reaction was thought to be due to the hemolytic effect of the acid, since blood aspirated into the syringe containing the drug solution was laked immediately. This prompted an inquiry into the hemolytic action of neutralized and unneutralized cevitamic acid dissolved in either physiologic solution of sodium chloride or distilled water.

Briefly, it was noted that concentrations of 1:1,000 or stronger of natural or synthetic cevitamic acid in physiologic solution of sodium chloride or water cause human blood cells to hemolyze at once. Within thirty minutes acid hematin forms in these concentrations, which are acid to litmus. No hemolysis occurs within forty-eight hours in dilutions of 1:5,000 or weaker of the acid in 0.9 per cent sodium chloride solution. Red cells do not break down when in contact with 2 per cent or less sodium cevitamate dissolved in physiologic solution of sodium chloride. Water solutions of the sodium salt less than 3 per cent are hypotonic and thus may cause hemolysis.

On the basis of these observations it is suggested that for intravenous use solutions of the sodium salt of cevitamic (ascorbic) acid approximate isotonicity, i. e., 1 per cent of the salt dissolved in physiologic solution of sodium chloride or 3 per cent in distilled water. If only the acid is available it should be neutralized with one-half its weight of sodium bicarbonate (sterile) in physiologic solution of sodium chloride or water before it is injected.

Parnassus and Third avenues.

CLINICAL COMPARISON OF DRUM AND SPECIAL ETHERS

M. S. DOOLEY, M.D.; C. J. WELLS, M.D.; J. C. FREY, M.D.; F. H. KNOFF, M.D.; W. J. GABEL, M.D.; J. S. MORDELL, PH.G.; J. J. BUETTNER, M.D.; C. E. MCELWAIN, M.D., AND C. D. BENTLEY, M.D., SYRACUSE, N. Y.

The Golds[1] have recently supplied data controverting the tradition that U. S. P. ether undergoes rapid deterioration when exposed to the air. More recently, Hediger and Gold[2] have secured data from 702 clinical anesthesias substantiating the earlier laboratory results. These were given in routine manner except that the anesthetists were unaware of the type of ether given ("blind test"). Bulk (drum) ether U. S. P., freshly opened quarter pound cans of ether U. S. P. and quarter pound can "special" ethers from different manufacturers were used. The only assurance the anesthetists had was that the presence of the supposedly deleterious substances (acids, aldehydes and peroxides) were always within the limits of tolerance of the U. S. P. X. Such assurance was based on U. S. P. and other tests (Nessler and potassium iodide) on each lot on the day used.

These results were of interest to us because our own experience had led us to the suspicion that, in some cases at least,

From the Pharmacologic Laboratory of the University of California Medical School.

1. Fisher, B. H., and Leake, C. D.: The Parenteral Administration of Cevitamic Acid (Ascorbic Acid) Solutions, J. A. M. A. **103**: 1556 (Nov. 17) 1934.

This research was aided by a grant from the Hendricks Research Fund.

From the University Hospital of the Good Shepherd (Drs. Dooley, Wells, Frey, Knoff and Gabel and Mr. Mordell) and the Syracuse Memorial Hospital (Drs. Buettner, McElwain and Bentley).

1. Gold, Harry, and Gold, David: Stability of U. S. P. Ether After the Metal Container Is Opened, J. A. M. A. **102**: 817 1934; The Stability of U. S. P. Ether After the Metal Container Has Been Opened: With Preliminary Results of a Clinical Comparison of U. S. P. Ether in Large Drums with Ether in Small Cans Labeled "For Anesthesia," Anesth. & Analg. **14**: 92 (March-April) 1935.

2. Hediger, Ella, and Gold, Harry: U. S. P. Ether from Large Drums and Ether from Small Cans Labeled "For Anesthesia," J. A. M. A. **104**: 2244 (June 22) 1935.

different brands of ether from the same manufacturer differed only in packaging, advertising and pricing.

We were therefore interested in making independent clinical tests ("blind tests") at the suggestion of Dr. Gold, using the same tests of purity as were employed by the Golds.[1] The small cans of "special" ethers were opened as usual at the time used, whereas some samples of bulk ether U. S. P. were used one month after the container was first opened, so that any advantages of freshness were in favor of the former. The tests were in no way unlike the usual routine ether anesthesias of the hospital, save that the anesthetists filled in the special blanks provided for the tests and were ignorant of brands of ether involved. The blanks used were the same as those used by Hediger and Gold,[2] with minor additions. The accompanying table shows the condensed results of 143 anesthesias.

Summary of One Hundred and Forty-Three Anesthesias

Type of Ether	Number of Cases	Male	Female	Anesthesia: Satisfactory	Fair	Unsatisfactory
Mallinckrodt "for anesthesia" ¼ pound can (white label)	49	24	23	41	1 + 1 (no record) uneven (alcoholic)	6 2 uneven, suffocation (1 alcoholic) 2 uneven, coughing (1 neurotic) 1 uneven, slow induction 1 uneven, coughing partial suffocation (alcoholic, obese)
Mallinckrodt U. S. P. ¼ pound can (blue label)	19	8 1?	10	17	1 + 1 (no record) uneven at first, periods shallow breathing and dusky color—atelectasis (nervous)	
Mallinckrodt U. S. P. bulk	63	18	45	53	3 + 1 (anesthetic; chloroform, ether, ethyl chloride mixture) 1 respirations shallow 1 uneven, dusky color 1 uneven (large amount 120 cc., from 9:10 to 9:50: removal of tonsils and adenoids)	5 + 1 (no report) 1 uneven, coughing tendency to vomit 1 induction difficult 1 coughing, spasm, cyanosis 1 induction difficult carbon dioxide, oxygen, ethyl chloride 1 coughing and suffocation
Merck for anesthesia ¼ pound can	1	..	1	1		
Squibb ¼ pound can	11	6	5	4	1 uneven, induction, suffocation (210 cc. used)	6 5 uneven, coughing, anesthetic—chloroform, ether, ethyl chloride mixture 1 uneven, anesthetic—chloroform, ether, ethyl chloride mixture
Totals	143			116	9	18

We are indebted to the surgical and nursing staffs of the University Hospital and the Syracuse Memorial Hospital for their cooperation during these tests.

The results show that bulk ether was satisfactory in 84.1 per cent, and quarter pound cans of ether in 78.7 per cent, any advantage shown being in favor of bulk ether. These results are confirmatory of the recent results of Hediger and Gold.[2]

No unusual complications were observed. There was one case of postanesthetic massive collapse of the lung (atelectasis). Reference to the table shows that not drum ether but U. S. P. quarter pound can ether was employed in this case. No significance is attached to this happening, since it occurs about as often during intraspinal as during inhalation anesthesia and is apparently due, in both types, to very shallow breathing.

From these results it seems evident that small can special ethers at a high cost offer no advantages over bulk ether U. S. P. either in safety or in efficiency.

Special Article

THE FOUNDATIONS OF DIET THERAPY

CLINICAL LECTURE AT ATLANTIC CITY SESSION

L. H. NEWBURGH, M.D.
ANN ARBOR, MICH.

Unlike the machine, the activity of the living organism is regulated from within. Its metabolism from hour to hour and from day to day proceeds in a manner largely independent of the supply of nutritive materials. Because of this inherent quality of the organism, its structure is injured when it is unable to obtain materials at the rate at which they are utilized or excreted. It may also be harmed when the intake of certain materials is excessive. But the degree of injury and the rate of its development vary greatly with the type of deprivation or excess.

It is a matter of only half a century since the importance of this point of view began to be realized. Then abruptly under the leadership of Carl Voit there was initiated a detailed study of the dietary requirements of the normal adult. Even though the problem is complicated, the knowledge already at hand is sufficient to inform us of most of the minimal requirements of the normal adult. In the case of the child much less has been established. Here an additional complexity is introduced by the necessity to provide for the formation of new tissue of ideal composition at an ideal rate. More recently realization has come that the diet of the pregnant woman, because of its effect on the fetus, needs a most careful consideration. During the first year the infant grows so rapidly that it cannot absorb from its digestive tract enough of the essential materials to produce new tissues of normal composition. As an example, certain facts concerning the growth of bone of small infants may be used, since they illustrate so vividly the dependence of normal skeletal development on the supply of calcium and phosphorus available to the fetus. At birth the bones of full term infants are filled with trabeculae. These trabeculae are absent from the bones of premature infants. Bauer and Aub,[1] working with kittens, observed the rapid disappearance of the trabeculae during the first weeks of extra-uterine life. McCollum and Simmonds report an experience from the Children's Hospital in Vienna, which leaves no doubt concerning the importance of the fetal store of calcium. Two full term infants were born on the same day, the first one of a healthy mother, the second of a woman whose bones were osteoporotic. Both infants were nursed by the healthy mother and each was given supplementary feedings of the same amount of cow's milk. Nevertheless, the infant of the woman who had received too little calcium during pregnancy developed severe rickets within six months while the other infant remained well. Nor does the inclusion of vitamin D in the diet guarantee normal growth of bone. Shohl [2] has given a clear demonstration of this fact. He writes: "Rats on a normal diet retained about

From the Department of Internal Medicine, University of Michigan Medical School.

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1. Bauer, Walter; Aub, J. C., and Albright, Fuller: J. Exper. Med. **49**: 145 (Jan.) 1929.

2. Brown, Helen B.; Shohl, A. T.; Chapman, Edna E.; Rose, Catharine S., and Saurwein, Esther M.: J. Biol. Chem. **98**: 207 (Oct.) 1932.

three times as much calcium and five times as much phosphorus as those on rachitogenic diets. This was true whether vitamin D was administered or not. The absolute amounts retained are dependent primarily upon the amounts in the diet."

I hope that these few experiences give a conception of the goal sought by those workers who are striving to delineate the normal diet. Familiarity with the many facts already accumulated must be obtained by use of appropriate textbooks.[3]

But dietetics did not develop against such a background. The idea that disease could be ameliorated by forbidding the use of certain foods was acceptable to the physician from the earliest times. He unconcernedly omitted one food after another, wholly oblivious of a far more important fact; namely, that the sick man should receive a sufficient amount of each of those substances which every normal person must have to avoid disease. The first requirement for the physician who proposes to employ diet therapy is a familiarity with the needs of the normal organism. In no other way can he assure himself that he is not producing a new disability or retarding recovery from the original one.

Next he must ask himself a second searching question. Does the disease under consideration make it necessary to increase or decrease the quantities of any of the constituents of the normal diet For example, hyperthyroidism and fevers increase the expenditure of energy. The diet should accordingly contain increased amounts of fats and carbohydrates. Because of curtailment of activity, certain disabling diseases, such as cardiac failure, act in the opposite direction. The work of the heart is proportional to the total metabolism. Therefore a sharp reduction of the energy value of the diet will lower the metabolic rate significantly. The burden on the incompetent heart may thus be lightened.

The diabetic patient can oxidize less dextrose than the normal person. In an effort to bring the dietary carbohydrate within the patient's capacity, the error recently witnessed should not be repeated. A boy, aged 6 years, was brought to me because he was stunted, weak and irritable even though the urine was continuously free of sugar. The physician who had been in charge of the diet for several years had omitted all milk, because it contains sugar. In so doing he had also deprived the child of his chief source of calcium without making any other provision for the growth of bone. Rearrangement of the diet to include a pint of milk daily quickly caused a most gratifying improvement in the boy's general condition.

Students of nutrition have obtained much information concerning the requirement of protein, vitamins and inorganic salts; but it is often forgotten that water must be included among the essential dietary constituents. In the case of the normal individual one may usually rely on thirst to insure a sufficient intake, but in many abnormal states the physician either has curtailed the amount that the patient would otherwise drink or has failed to supply what the patient could not drink because of his disability. Such a restriction might have jeopardized even the health of a normal man.

Since no systematic study of water requirements had been made, my associates and I undertook such an investigation. Some of our observations will be reported, because they are in sharp conflict with present beliefs.

In order to appreciate the water requirements of the human body, the physician must acquire some familiarity with the quantitative aspects of the loss of water. It is often forgotten that water vapor is continuously passing away from the skin and lungs as one means of carrying off the heat produced by the oxidative processes of the body. The normal adult of quiet occupation, living in a comfortable atmosphere, will lose from 900 to 1,400 Gm. of water in that way each twenty-four hours. Either hot weather or muscular work may double or treble the output. The combination of the two, when the temperature is over 100 F. and the air is dry, is sufficient to cause the evaporation of 10 liters of water a day. The other important loss of water is as urine. One of the major functions of the kidneys is to excrete in solution the solid end products of the metabolism. But the kidneys are sharply limited as to the amount of these products which they can excrete per unit of water. (This capacity may be expressed as the specific gravity of the urine, which in the case of healthy kidneys rises to 1.030 when the intake of fluid is sharply limited.) Appropriate studies[4] have shown that normal kidneys need at least 500 Gm. of water each twenty-four hours in order to eliminate the usual solid wastes of the period. When the water vapor is added to the urinary output and a small additional allowance is made for feces, it is seen that the normal man loses upward of 1,500 Gm. of water daily. What will happen if his total intake of fluid is restricted to half that amount? Such studies[5] have demonstrated that the loss by evaporation has a prior claim over the kidneys. The former is not lessened even though the water left over for the formation of urine is inadequate to prevent retention of wastes. The degree of the retention is, however, mitigated through a limited contribution of water by the body itself. Normal persons were subjected to the restricted intake of fluid for three or four days. During that interval the body grudgingly gave up from 3 to 4 liters of its own water. Then the symptoms of dehydration had become so disturbing that the experiments had to be stopped. Such observations have impressed us with the grave import of dehydration.

This minimal normal requirement of 1,500 Gm. of water every twenty-four hours may be far too little to supply the demands of several pathologic states. None is more significant than nephritis, for diseased kidneys suffer a diminishing ability to form concentrated urine. In advanced stages of chronic nephritis it may take three times the normal amount of water to remove each gram of urinary solid. Under these circumstances the minimal intake that will prevent retention and dehydration is 2,500 Gm. of water daily. Nevertheless the restriction of fluids in the management of nephritis is a widely spread practice based on the erroneous belief that diseased kidneys have difficulty in excreting water. In fact, it has been almost universally taught that blockage in the kidneys is the cause of nephritic edema. According to that doctrine, to get rid of the edema one must remove the water by other routes and at the same time one must permit as little water as possible to enter the body. Only a few simple experiments were needed

3. The book recently published by the author in collaboration with Frances Mackinnon (The Practice of Dietetics, New York, Macmillan Company, 1934) was designed to meet the practitioner's needs in this respect.

4. Lashmet, F. H., and Newburgh, L. H.: J. Clin. Investigation **11**: 1003 (Sept.) 1932.

5. Newburgh, L. H., and Lashmet, F. H.: Am. J. M. Sc. **186**: 461 (Oct.) 1933.

to show the utter fallacy of these earlier beliefs and to indicate the shocking amount of harm that their acceptance had worked.

Examination of the accompanying table shows that the kidneys of the edematous subject were able to secrete a very large amount of urine containing a normal amount of solids as soon as he was permitted to drink a sufficient amount of water. The failure to

Water Requirements of Nephritic Patients

Subjects	Water Restricted for 24 Hours		Water as Desired for 24 Hours	
	Water in Urine, Gm.	Solids in Urine, Gm.	Water in Urine, Gm.	Solids in Urine, Gm.
Normal	500	35	877	37
Nonedematous, hypertensive nephritis	1,804	33	4,922	38
Edematous, chronic nephritis	210	12	3,948	35

prevent retention on the preceding day could have been due only to insufficient water. Had he been able to mobilize body water on the day of restriction as the nonedematous nephritic patient did, he would have been able to avoid serious retention but at the expense of dehydration. One hesitates to make a choice between the two evils.

The recent studies of Maddock [6] in a totally different field also emphasize the necessity of getting a sufficient amount of water into the bodies of certain patients. He writes:

> A consideration of the sources of water and all the channels of its excretion is of inestimable value to the surgeon. Many diseases under his care are complicated by an interference with the normal intake of fluids and by abnormal outputs. Under these circumstances an adequate supply of water must be secured by parenteral administration. The problem is to know how much is needed. The administration of what seems to be a large amount may nevertheless fall far short of the needs, as the following experience illustrates: A youth entered the hospital with acute intestinal obstruction. Four hours later a colostomy was done. For several days after the operation he had rather persistent vomiting, watery diarrhea and moderate drainage from the colostomy tube. In order to meet these losses of fluid he had been given 3,500 cc. of fluid intravenously every day. However, in a few days the volume of urine had fallen to 250 cc. per twenty-four hours. He was drowsy and the nonprotein nitrogen of the blood had risen to 57 mg. per cent. A calculation of all the losses of water from the body was then made and it was found that the total amounted to about 4,500 cc. each twenty-four hours. He had been dehydrating at the rate of 1,000 cc. daily. The administration of sufficiently large volumes of fluid caused a rapid disappearance of symptoms, a great increase in the amount of urine and a return to normal of the blood N. P. N.

The diminishing output of urine was direct evidence of the inadequacy of the supply of water.

When man is studied as a mechanism he is found to obey the fundamental laws that govern the universe. His response to the energy of his environment is in no way different from that of an inanimate object. However, the physician appears to be less familiar with the significance of this relationship than with many other fields of nutrition. This is strange, because the transformation and expenditure of energy by mammals was the first phase of nutrition to be searchingly investigated. The great master Max Rubner built a solid foundation for all subsequent studies of energy relations by demonstrating that the first law of thermodynamics, namely, that energy can neither be destroyed nor created, holds as rigidly for mammals as it does for the physical universe. This first principle may be recast into more familiar language by stating that all the energy released by the oxidations within the body will be dissipated at the rate at which it is produced, provided the internal temperature does not change. With the calorimeter this fundamental fact has been repeatedly confirmed and greatly elaborated in New York by Lusk and his pupils and in Boston by F. G. Benedict. Unfamiliarity with these fundamental laws has made the physician more willing to accept vitalistic explanations of disease. There could not have been the widespread acceptance of the contentions of several German professors if it had been generally known that man is an integral part of the universe and constrained to obey its basic laws. These men stated that there were two kinds of fat people: a small group that had become obese by merely eating too much, and a larger group of persons who were supposed to have laid down an increasing amount of adipose tissue without regard to what they had eaten. The latter statement was a flat denial of the law dealing with the conservation of energy. Attempts of many sorts were made to overcome this primary difficulty by offering bizarre and complicated metabolic abnormalities as causes of the adiposity. One such claim that has given satisfaction to many minds postulates that the fat man converts too much of the food to adipose tissue. Let us examine this statement. It is assumed that an obese individual of that hypothetical type who is not overfed receives daily 150 Gm. of protein, 100 Gm. of fat and 500 Gm. of carbohydrate, making a total of 3,500 calories. The protein is utilized and thus yields 600 of the 3,500 calories expended. All the fat is deposited and all the carbohydrate is converted to fat and deposited. The total deposition of fat will then be the sum of the food fat (100 Gm.) plus the fat derived from the carbohydrates (222 Gm.), or 322 Gm. The subject will in that way have added 322 Gm. daily to his weight. But, having stored the major portion of his diet, whence will he derive the 2,900 calories that he dissipated in addition to those afforded by the oxidation of protein? There can be only one answer: by oxidizing 322 Gm. of body fat.

It seems to me that these false prophets made their mistake by paying too little heed to the self-regulatory nature of the living organism. They never recorded the total expenditure of energy of the individual under observation. They fed him a known amount of food and compared its calorific value with what they guessed he was expending. If he did not lose weight according to the expectation, it was assumed that he was the victim of some peculiar disease that made it possible for him to evade the laws that govern normal persons and the universe in general.

When, however, we had devised a technic [7] that permitted us to record the expenditure of energy over long periods of time, we were gratified to find that the earlier conclusions concerning the energy relations of normal men applied in detail to all obese persons. There is but one fundamental cause [8] of obesity. It is an inflow of energy that exceeds the outflow. The

6. Coller, F. P., and Maddock, W. G.: Internat. Clin. **3**: 191 (Sept.) 1934.

7. Newburgh, L. H.; Wiley, F. H., and Lashmet, F. H.: J. Clin. Investigation **10**: 703 (Oct.) 1931.

8. Newburgh, L. H., and Johnston, Margaret Woodwell: J. Clin. Investigation **8**: 197 (Feb.) 1930.

outflow may be large or small. If the latter, a small amount of food may still contain as much energy as that expended by the patient. All adiposity can be reduced by a properly constituted diet.

SUMMARY

This paper consists of a plea to put diet therapy on a rational basis. Attempts to alleviate disease by manipulation of the intake of food are as old as medicine itself, but systematic efforts to discover the nutritional needs of man are very modern. In the absence of this new knowledge, the physician accomplished little through diet because he centered his attention on the omission of foods. He is urged to acquaint himself with the quality and quantity of the constituents of the normal diet. This is his only assurance that he will not prescribe for his patient a diet that is deficient in any respect. He must then decide whether the condition of the patient requires an increase or a decrease of any one or several of the dietary constituents so that he may modify the normal diet to meet the new requirements.

University Hospital.

Council on Pharmacy and Chemistry

REPORTS OF THE COUNCIL

THE COUNCIL HAS AUTHORIZED PUBLICATION OF THE FOLLOWING REPORT.

PAUL NICHOLAS LEECH, Secretary.

SHOTGUN VITAMIN THERAPY

The American people have been made "vitamin-conscious." Clever advertising emphasis on the infinitesimal and not easily detectable amounts in which the vitamins occur in ordinary foodstuffs and further play on the startling results that appear in animals deprived of even these small amounts have stimulated a popular romance and mystery.

This popularization of the comparatively recently acquired and constantly growing knowledge of the various vitamins has resulted in many errors and misconceptions, largely to the benefit of the unscrupulous but sometimes also of the well intentioned manufacturers of products offered to the public. Among these misconceptions are the ideas that everybody needs to take supplements of all the vitamins all the time and that it is both therapeutically and chemically advisable to combine all or some of the vitamins, perhaps with some mineral or minerals, in one preparation. It has apparently been forgotten that no necessity has been found for administering preparations containing complex combinations for effective maintenance of health when a well balanced diet is taken. Clinically recognizable multiple vitamin deficiency diseases are certainly rare in this country.

It has been stated that about thirty-seven elements or substances are necessary in a complete diet; among these are vitamins. That they are grouped together under this name does not indicate that they are closely related chemically: For instance, vitamin C is closely related to the sugars, while vitamin D is one of the sterols. From a physiologic standpoint it is just as irrational to prescribe a mixture of a number of the vitamins as a combination consisting of cystine, iodine, iron, and linoleic acid or any other combination of dietary essentials.

At the present time there seems to be no more logical basis for including all or a number of vitamins in one preparation than there is for combining a number of the other known dietary essentials in any one pharmaceutical product. The functions of the vitamins are as diverse and independent as their chemical constitution would indicate.

It is not perhaps surprising that efforts have been made to supplant the use of the various natural vitamin containing substances by preparations of highly potent concentrates, either singly or in combination, and also by their combination with minerals in mixtures, in tablets and in capsules. Having prepared such combinations, it is of course natural that manufacturers propagandize information regarding their need extensively to the medical profession through scientific journals and also to the lay world through the radio, the press and the mails. At first sight the combinations of vitamins offer the obvious advantage of simplicity of administration from the point of view of both the patient and the physician. From the standpoint of the manufacturing pharmacists they have the added advantage of ease of preparation, wide demand and ready marketability.

The fact that the vitamins are chemically active substances essential, in all probability, for maintaining normal cell metabolism makes it necessary here to consider the bearing of the pharmacologic incompatibility of mixtures of drugs and their possible antagonistic action in the body. Sufficient attention perhaps has not been paid to the physiologic action of potent vitamin concentrates when they are combined and taken by man into the body in fixed amounts; that is, as to whether the action is the same as when the vitamins in their natural state are supplied to the organism, or whether it is different.

The voluminous literature reveals little information dealing directly with the subject of polypharmaceutic mixtures of vitamins. A few studies in which a combination of physiologically active concentrates has been administered indicate significant interactions between the vitamins and fail to show the anticipated beneficial results. There should be borne in mind the paucity of information in this field, and firms marketing such products should be reminded that the burden of proof for claims made for such mixtures rests entirely on the firms making them.

The question arises as to whether there may be an enhancing action of one vitamin concentrate when combined with another. There is practically no reference in the literature to such a phenomenon when the absence of a multiple deficiency disease is excluded critically. The impression is gained that, at best, the action of combined concentrates of vitamins would be the sum of the effects of each vitamin constituent. Commonly, the potency used of each concentrate for prophylaxis is that which has been adopted as the protective amount which, it should be remembered, has been determined according to its effect in different species of animals. The argument that certain vitamins exist together in nature is no guaranty that the action to be expected from these is brought about by administration of potent concentrates in which they are combined by various processes. When a specific vitamin in its natural state is administered, utilization in the normal human body is adjusted according to a nicely regulated mechanism; but when the vitamins are extracted or concentrated and given together in different mixtures in tablets and in capsules, it may be questioned whether or not there is an interference or enhancement of the specific effect of the different vitamin concentrates so combined. So far as can be found there is in the literature very little reference to that question.

Even if no harm results, it should not be forgotten that the giving of combined vitamin concentrates unnecessarily often proves to be an economic wastage. This is so especially in the use of such combinations in the treatment of a specific deficiency disease, when the better practice of medicine indicates the therapeutic use of the specific or of a single vitamin in adequate dosage without necessarily requiring an increase (or decrease) in dosage of the other vitamins. There is no direct evidence that vitamins have a supplemental effect on one another when in combination. It should be pointed out here that the administration of complex vitamin preparations is open to all of the objections that may be urged against the routine use of mixtures containing ingredients in fixed proportions.

It is well known that the commonly used vitamins are peculiarly susceptible to destructive effects when they are removed from their natural chemical environment; it does not therefore seem necessary to discuss in any detail the antagonistic action of the different factors in the destruction of each individual vitamin. Yet there are certain pertinent facts that may be of interest.

For instance, it has been shown that there is impairment in potencies of vitamins A and E when they are subjected to

aeration, especially in the presence of heat. As early as 1920, Hopkins showed that vitamin A in butter, although resistant to heat alone, is rapidly destroyed by heat plus aeration. Later, Mattill discovered that not only oxidation but rancidity developing in sources of vitamins A and E destroyed their specific action. Another procedure that decreases the availability and hence the effectiveness of vitamins A and E is admixture of mineral oil. Presumably this results from the solvent action of the oil, so that the vitamins escape absorption. The ease with which vitamin C potency is impaired by heat and by varying the p_H of the solution in which it is contained has been repeatedly observed and is of practical significance in the canning of fruits and vegetables. The catalytic action of copper in such processing is well established as responsible for destruction of vitamin C.

Further evidences of the lessening of the potency of vitamin concentrates in mixtures are found in their combination with minerals. The references consulted are those concerned chiefly with iron, but there is some reason to suppose that iodine may destroy the potency of vitamins. McCollum was the first to note the destructive effect on vitamin A of diets containing iron salts, when fed to white rats. Subsequently, Jones showed that ferrous sulphate could so effectively destroy vitamin A that xerophthalmia might be produced (in rats). Mattill and also Waddell and Steenbock reported that vitamin E could be destroyed by the addition of iron salt to a stock ration.

It appears, therefore, that within recent years the contributing causes for the destruction or prevention of the characteristic effects of vitamins have received much attention, with the result that special efforts have been made in manufacturing such preparations to make them effective. In the case of some preparations this has been found possible. The use of antioxidants, the regulation of the p_H and of the thermal conditions, and various other measures have been designed to aid in preventing the destructive action. It may be said that vitamin concentrates of vitamins A and D can be manufactured so that in the finished product the concentrate will meet the requirements of the recent U. S. P. X-revised dosages for these vitamins. But it is very difficult to find any evidence whatever that a deterioration of the potency may not take place on standing or from the interaction of highly potent concentrates of *other* vitamins when combined. This holds true for combinations of vitamin concentrates in the form of capsules, in tablets and in liquid or oily mixtures, and of vitamin concentrates with minerals. Tablets and concentrates containing vitamins A and D have been quite stable for the period of years in which it has been possible to test them by biologic assay.

There is experimental evidence supporting the view that an antagonistic reaction exists between certain of the vitamins when given in combination. Certain investigators have advanced the belief that large amounts of vitamin A concentrate may be responsible for a disturbing effect on vitamin B. As early as 1922 it was reported by Mouriquand and Michel that, in a series of experiments on the interference with the curative action of vitamin C in the treatment of scurvy, they attributed the interference to the presence of vitamin A.

The Council's referee recently reviewed a considerable number of cases of scurvy occurring in an eastern hospital where there was practically an epidemic of scurvy. Nearly every year from forty to sixty children with scurvy are seen. Reviewing the number of cases in his service in the last ten years, the referee found something like 300 or 400. When asked, some of the mothers stated that their children had been fed orange juice. When asked how the orange juice was given, they stated that it had been mixed with cod liver oil preparations.

There have been numerous investigations on the toxicity of vitamin D concentrates in large quantities. A few of these are the investigations of Kreitmar and Moll; Pfannenstiel; Light, Miller and Frey; and Klein. In such experiments the addition of extra amounts of vitamin B complex has been shown to diminish the toxicity of excessive vitamin D dosage according to the work of Harris and Moore.

These are some of the better known examples of the interrelationship of the total quantitities of vitamins to one another. It certainly would seem that one vitamin, in varying proportions, might render ineffective quantities of another vitamin that normally are adequate. Further investigation seems necessary before one is able to say just which vitamin concentrates may be safely mixed without impairment of the activity of the ingredients, how much of each is necessary in such mixtures, and what deleterious influences may result from the presence in such mixtures of various oils, oxidizing agents, mineral salts, and so on.

From this relatively short review concerning the combination of vitamin concentrates for prophylaxis and therapeutic effects, certain points stand out:

It has been brought out that there has been practically no experimental or clinical evidence which tends to show that vitamin concentrates are enhanced or have any supplementary action when given in combination, either for prophylaxis or for therapeusis. The best that may be expected from any given combination is that each specific vitamin will produce its maximum effect independently of the other ingredients of the mixture.

It has also been shown that certain inorganic, organic and even physical agents may destroy the potency of vitamins with which they come in contact. For example, vitamins A and E, especially the former, are destroyed by contact with oxygen, especially during heating, by mixture with mineral salts like iron, and with certain organic fats. Even food materials and certain inert substances may interfere with the effect of or absorption of vitamins. For example, lard and other unsaturated food fats and mineral oil so affect vitamin A. This makes it important to study further the influence of other ingredients in synthetic preparations of vitamins where they have been removed from the protective influences present in their natural sources, and to investigate the results of administering vitamin concentrates in close relation to food intake. The presence of pathologic states may also influence the absorption of vitamins given even in ordinarily adequate amounts; that is, abnormalities in the small intestine or operative shunts may interfere with the absorption of vitamins A, D and B, biliary disease may likewise interfere with vitamin A utilization, and gastric anacidity may prevent the proper utilization of vitamins C and B.

It has been pointed out that there is ever increasing evidence that a delicate interrelationship exists between vitamins, because of either a physiologic relationship or actual incompatibilities of various vitamins; that the administration in combination of concentrates of vitamins, each of which is active independently, may so alter the effectiveness of each as to render it inadequate or to necessitate an increase in its dosage. For example, vitamin B has been reported to be rendered less effective when given with large amounts of vitamin A. In order to offset that, it seems that much larger amounts of vitamin B complex are necessary in such mixtures. In the case of vitamin C, large quantities of cod liver oil may render it ineffective in the prevention and cure of scurvy. There is not even a sound empirical basis for fixing the relative ratios of the various vitamin ingredients of mixtures.

The attempt to supply a sufficient amount of a single vitamin concentrate specifically indicated, when a mixture of vitamins is prescribed, may result in an excess of the remaining active agents. The possibility of harm from such excess must be kept in mind; even when no harm is done, such a combination may constitute an economic waste.

From this review the Council concluded that there is a wide field for the study of this question: as to the incompatibilities, the impairment of vitamins when they are prepared in concentrate and prepared in mixtures, and as to the manner in which they are administered to the patient.

One of the cardinal principles of the Council has always been that the burden of proof lies with the manufacturer. From the foregoing brief review it is discerned easily that the status of mixed vitamin therapy is on insecure grounds. The Council therefore will not accept mixtures containing vitamin concentrates until the manufacturers are able to present adequate evidence of their rationality. This does not refer, however, to concentrates of vitamin A and D, which occur combined in nature as such in cod liver oil; nor does it apply to any combinations of vitamins that may occur in nature in therapeutic amounts.

Committee on Foods

ACCEPTED FOODS

THE FOLLOWING PRODUCTS HAVE BEEN ACCEPTED BY THE COMMITTEE ON FOODS OF THE AMERICAN MEDICAL ASSOCIATION FOLLOWING ANY NECESSARY CORRECTIONS OF THE LABELS AND ADVERTISING TO CONFORM TO THE RULES AND REGULATIONS. THESE PRODUCTS ARE APPROVED FOR ADVERTISING IN THE PUBLICATIONS OF THE AMERICAN MEDICAL ASSOCIATION, AND FOR GENERAL PROMULGATION TO THE PUBLIC. THEY WILL BE INCLUDED IN THE BOOK OF ACCEPTED FOODS TO BE PUBLISHED BY THE AMERICAN MEDICAL ASSOCIATION.

RAYMOND HERTWIG, Secretary.

CELLU BLACKBERRIES PACKED IN WATER WITHOUT ADDED SUGAR OR SALT

Distributor.—The Chicago Dietetic Supply House, Inc., Chicago.

Packer.—Eugene Fruit Growers Association, Eugene, Ore.

Description.—Canned cooked blackberries packed in water without added sugar or salt.

Manufacture.—Blackberries picked at the proper stage of ripeness are mechanically graded according to size (imperfect fruit or foreign material is removed), spray-washed and automatically filled into cans. The berries are covered with water, heated for a definite time at 91 C., and the cans are sealed, processed at 100 C. and cooled.

Analysis (submitted by distributor).—

	per cent
Moisture	89.0
Total solids	11.0
Ash	0.4
Fat (ether extract)	0.8
Protein (N × 6.25)	1.0
Reducing sugars as invert sugar	4.6
Sucrose	0.2
Crude fiber	2.0
Carbohydrates other than crude fiber (by difference)	6.8

Calories.—0.4 per gram; 11 per ounce.

Claims of Distributor.—For diets in which sweetened fruit is proscribed.

MONARCH STRAINED APPLESAUCE, CARROTS, PEAS, PRUNES FLAVORED WITH LEMON JUICE, SPINACH, STRINGLESS BEANS AND VEGETABLE SOUP WITH CEREAL AND BEEF BROTH. UNSEASONED

Distributor.—Reid, Murdoch & Company, Chicago.

Packer.—The Larsen Company, Green Bay, Wis.

Description.—Respectively strained applesauce, carrots, peas, prunes flavored with lemon juice, spinach, stringless beans and vegetable soup (carrots, potatoes, tomatoes, celery, peas, beans, spinach) with pearl barley and beef extract; prepared by efficient methods for retention in high degree of the natural mineral and vitamin values. No added sugar or salt. These products are the same as the respective accepted Larsen's vegetables and fruits (THE JOURNAL, July 22, 1933, p. 282; July 29, 1933, p. 366; Aug. 12, 1933, p. 525; Aug. 19, 1933, p. 605; Aug. 26, 1933, p. 675; Aug. 10, 1935, p. 437).

(1) BLUE AND WHITE BRAND CRYSTAL WHITE TABLE SYRUP
(2) BLUE AND WHITE BRAND GOLDEN TABLE SYRUP

Distributor.—Red and White Corporation, Chicago.

Packers.—Manufacturers of accepted brands of syrups.

Description.—(1) Table syrup; corn syrup with cane sugar syrup, plain or flavored with vanilla or with vanillin and coumarin (THE JOURNAL, Oct. 15, 1932, p. 1353; Sept. 3, 1932, p. 833; Nov. 18, 1933, p. 1635, and April 15, 1933, p. 1174). (2) Table syrup; corn syrup flavored with refiners' syrup (THE JOURNAL, Dec. 3, 1932, p. 1948; July 23, 1932, p. 309; Oct. 28, 1933, p. 1393, and March 5, 1932, p. 817).

CHIPPEWA IODIZED SALT

Manufacturer.—The Ohio Salt Company, Wadsworth, Ohio.

Description.—Table salt containing added magnesium carbonate, sodium bicarbonate and potassium iodide (0.02 per cent).

Manufacture.—Salt containing 1 per cent magnesium carbonate, prepared as described for Chippewa Free Running Salt (THE JOURNAL, Sept. 7, 1935, p. 800), is admixed with potassium iodide and a small quantity of sodium bicarbonate and automatically packed.

Analysis (submitted by manufacturer).—

Moisture	trace
Calcium sulphate	0.7
Calcium chloride	0.08
Magnesium carbonate	1.0
Potassium iodide	0.02
Sodium bicarbonate	0.1
Sodium chloride (by difference)	98.2

Claims of Manufacturer.—For all table and cooking uses. The added magnesium carbonate tends to preserve free running qualities, and the sodium bicarbonate to prevent loss of iodine. The iodine in the salt aids in preventing simple goiter caused by insufficient iodine in the diet. Used daily as the only salt on the table and in cooking, it richly supplements the iodine of diets deficient in that element and thus helps to protect against simple goiter.

SIEVED APPLES, APRICOTS, ASPARAGUS, BEETS, CARROTS, CELERY, GREEN BEANS, PEACHES, PEAS, PRUNES, SPINACH, TOMATOES
UNSEASONED
(1) IRIS BRAND
(2) SEAKIST
(3) TRUPAK
(4) WELLMAN BRAND

Distributors.—(1) Haas, Baruch & Co., Los Angeles, (2) The Nielsen Corp., Ltd., San Francisco, (3) Haas Brothers, San Francisco, Oakland, Fresno, (4) Wellman, Peck & Co., San Francisco.

Packer.—The Nielsen Corp., Ltd., Oakland, Calif.

Description.—Respectively sieved apples, apricots, asparagus, beets, carrots, celery, green beans, peaches, peas, prunes, spinach and tomatoes; prepared by efficient methods for retention in high degree of the natural mineral and vitamin values. No added sugar or salt. The products are the same as the respective accepted Warranty vegetables and fruits (THE JOURNAL, May 11, 1935, p. 1708; March 9, 1935, p. 835; April 27, 1935, p. 1504; April 13, 1935, p. 1331; March 16, 1935, p. 923; March 9, 1935, p. 835; April 6, 1935, p. 1241; March 23, 1935, p. 1007; April 20, 1935, p. 1419; March 30, 1935, p. 1074; Feb. 2, 1935, p. 399; June 1, 1935, p. 1999).

FAIRWAY WHEAT CEREAL

Distributor.—Twin City Wholesale Grocer Company, St. Paul.

Manufacturer.—Pillsbury Flour Mills Company, Minneapolis.

Description.—Granular wheat endosperm or farina, practically free of germ and bran.

Manufacture.—Wheat is cleaned, washed, scoured, crushed, and the bran and germ separated from the flour middlings (endosperm) by the usual milling methods. Endosperm graded to uniform granulation is heated to destroy any insect infestation and packed in cartons.

Analysis (submitted by distributor).—

	per cent
Moisture	8.7
Ash	0.4
Fat (ether extraction method)	0.8
Protein (N × 5.7)	10.5
Reducing sugars as dextrose	0.2
Sucrose	1.3
Crude fiber	0.4
Carbohydrates other than crude fiber (by difference)	79.2

Calories.—3.7 per gram; 105 per ounce.

Claims of Manufacturer.—For use as a breakfast cereal or other table dishes; also for infant feeding as a carbohydrate supplement to milk under the directions of a physician.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

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SATURDAY, SEPTEMBER 28, 1935

THE VITAMIN ALPHABET

In 1911 Funk proposed the term "beriberi vitamine" for the active substance the lack of which in the diet led to polyneuritis. Subsequently the designation "vitamine" (later contracted to "vitamin") was employed for an ever growing group of principles of unknown chemical constitution occurring in the diet and necessary to health or, ultimately, to life. In order to avoid difficulties in the nomenclature of these dietary factors, which became associated more or less fortuitously, McCollum suggested that alphabetical designations be employed for them until such time as chemical names could be assigned. Drummond in 1920 combined the terms of Funk and McCollum;[1] since then "vitamin A, B, C" and so on have been used almost uniformly in the literature, though not always to designate the same substances.

It appears that, owing to popularization of the terms, the use of the alphabetical designations of McCollum has persisted in some cases at least beyond the time intended by their originator. Moldavan[2] has recently pointed out:

> The crystallization, the isolation and our more or less definite knowledge of the physiological properties of the so-called vitamins show that there is no longer any scientific basis to maintain such widely different chemical substances as carotenes, ascorbic [cevitamic] acid, irradiated sterols, pyrimidine-thiazole compounds, sodium phosphate, manganese compounds, etc., under the same heading, except perhaps for historical purposes.
>
> The academical disagreement between British and American biologists over mere initials to be given to otherwise well-defined products adds to the confusion.
>
> Antineuritic, antiscorbutic, antirachitic, antianemic, antigoitric, etc., substances should be classified with the chemical family to which they belong or grouped with the natural or pharmaceutical substances which have closely related physiological properties.

This is in accord with the conclusions of the Council on Pharmacy and Chemistry, whose report on "Shotgun Vitamin Therapy"[3] appears elsewhere in this issue. The association of a number of unrelated essential dietary factors under one name has had several undesirable results, particularly in therapeutics. For no other reason than that they are grouped under one name, various vitamins, even those that do not occur together in natural sources, have been administered in pharmaceutic combination. Mixtures containing almost every conceivable combination of vitamins, some including also other real or alleged dietary essentials, have been offered to the medical profession by drug manufacturers. As the Council points out, "From a physiologic standpoint, it is just as irrational to prescribe a mixture of a number of the vitamins as a combination consisting of cystine, iodine, iron, and linoleic acid or any other combination of dietary essentials. . . . The functions of the vitamins are as diverse and independent as their chemical constitution would indicate." The Council discusses evidence relating to chemical and biologic incompatibility of different vitamins. It emphasizes the necessity of considering concentrated preparations of these agents in the same light as drugs; "the administration of complex vitamin preparations is open to all of the objections that may be urged against the routine use of mixtures containing ingredients in fixed proportions." With increasing knowledge of the nature and effects of the substances that have been grouped as "vitamins," the necessity for a more rational approach to their therapeutic use becomes evident.

1. Cited from Sherman and Smith, The Vitamins, New York, Chemical Catalog Company, Inc., 1931.
2. Moldavan, Andrew: Vitamins? Science **81**: 639 (June 28) 1935.
3. Shotgun Vitamin Therapy, report of the Council on Pharmacy and Chemistry, this issue, p. 1037.

REX BEACH WRITES UP BONINE

Rex Beach's promotion of the claims for Mahlon Locke in the *Cosmopolitan* magazine must have sold a good many copies. It may even have had something to do with the large display advertisement of M. W. Locke shoes that appeared in the same issue as one of the Rex Beach ballyhoos for the toe-twister of Williamsburg. Nobody knows how many sick people it caused to waste considerable sums of money traveling to the Locke shrine for the kind of faith healing that Locke employs. But that apparently does not worry Rex Beach! It is his business to write articles that he can sell; he seems to be little, if at all, concerned with the public health aspects of the matter.

Cosmopolitan magazine now announces in association with the publishing of Mr. Beach's latest article that "This article reflects the impressions of the author, and we publish it for its human interest value and not as carrying an endorsement." This announcement appears in very small type and, doubtless, will not make nearly as much of an impression on the readers as the display type and the pictures that accompany Mr. Beach's exposition of the qualities of Dr. F. N. Bonine as a "famous benefactor of the blind" and a "Modern Miracle Man."

The record of Dr. F. N. Bonine in the field of medicine can be recounted in a few short lines. He graduated from the University of Michigan in 1886 and received his license to practice medicine in Michigan in 1900. He seems to have been practicing continuously

in Niles, Mich., but did not become a member of his local medical society until 1927. He is not a Fellow of the American Medical Association nor is he a member of any national organization in the field of ophthalmology. Dr. Bonine does not advertise, but he has apparently for years been doing a large business under the claim of dissolving cataract. Patients who have been to Niles to see Dr. Bonine describe a typical experience which much resembles that associated with the practice of Mahlon Locke. Great numbers of people come to see him. They are charged $2 for the first visit and $1 for subsequent visits. The doctor practices in his shirt sleeves and the "miracles" are performed under circumstances which are calculated to impress by their simplicity. The usual method of treatment for patients with cataract is the prescription of eye drops which consist largely of boric acid and sodium salicylate in witch hazel water. There is not the slightest scientific basis for the claim that any cataract is benefited or removed by putting such drops in the eyes.

While Dr. Bonine does not advertise, he has certainly been no modest violet as far as concerns the use of publicity. His name has continuously been associated with the employees of the prize ring, the wrestlers, track athletes and similar inhabitants of the spotlight. In 1928, when he had pneumonia, there was a lot of furor associated with the shipment of a pneumonia serum by airplane. At that time a newspaper called the Benton Harbor *Palladium* said: "Dr. Bonine is undoubtedly the World's greatest physician in the treatment and removal of eye cataracts. He uses a secret formula for which he has been offered a fortune by hospitals and physicians in private practice. Dr. Bonine is said to have declared that he will take with him to the grave this formula with which he has so successfully treated cataracts for the last quarter century. However, friends of his declare that when the Bonine strong box is opened and his will read, this safely guarded formula will be made known to the world."

This is just about the whole story in relationship to Dr. Fred N. Bonine. Every one knows that a patient with gradually developing cataract passes through phases in which he sees better simply because of his anxiety to improve and that cataracts vary greatly in the length of time required for them to mature or in the length of time in which eyesight is sufficiently lost to make surgical procedure necessary. The cataract may spontaneously regress, advance or remain quiescent. During this period of gradual development the hopeful patient is likely to claim improvement with any method of treatment given to him with a strong enough suggestion that it will be of benefit. Dr. Bonine is not the first physician to be misled into a belief of efficiency by this aspect of human nature. Yet eventually every scientifically minded man learns to distinguish between the conviction of the believer and the appearances seen with the ophthalmoscope and other scientific devices that cannot be misled by the vagaries of the human mind.

Mr. Rex Beach and the *Cosmopolitan* are not rendering a service to mankind by their exploitation of so-called miracle men. They are likely to cause a considerable number of sick people to spend money for transportation which might very well be spent in securing good medical care at the hands of competent physicians. Mr. Beach is himself hardly sufficiently trained in scientific medicine to have the slightest comprehension of the significance of testimonials or of the enthusiastic utterances of neighbors and friends in the villages which depend on the "miracle men" for such business as comes to them.

Incidentally, Mr. Beach spent some time last June in the Scientific Exhibit of the American Medical Association in Atlantic City. What he saw there were actual miracles of science with the evidence to support them. Yet he did not choose to exploit these established discoveries, fearing perhaps that they lacked the romance associated with the fictional records of the "miracle workers" of whom he writes.

MEDICAL SERVICES UNDER WORKS PROGRESS ADMINISTRATION

The United States Works Progress Administration has announced that mutually satisfactory arrangements with medical groups and hospitals are now in process of formulation for the medical, surgical and hospital care of employees of the administration who are injured in the performance of their work. Under the provisions of the United States Employees' Compensation Act of 1916, as amended, such services must be furnished by or on the order of United States medical officers and hospitals, but when that is not practicable they may be furnished by or on the order of private physicians and hospitals designated or approved by the United States Employees' Compensation Commission. When no such physician or hospital is available, however, the proper local representative of the Works Progress Administration may approve physicians and hospitals to render necessary services. The term "physician" is construed by the United States Employees' Administration to include only graduates of recognized medical schools who hold the degree of doctor of medicine and are licensed to practice medicine in the states in which they reside.

Under the Works Progress Administration organization an accident compensation officer in each state is to be responsible for the entire conduct of the compensation program there. A state compensation office and such local compensation offices as may be necessary are to be established to facilitate the handling of claims. A deputy compensation officer, empowered to act locally for the state compensation officer, is to visit each compensation district at least once each week. Competent first aid men are to be on duty on each job undertaken by the administration.

Physicians and hospitals should submit their vouchers for services rendered to employees of the Works Progress Administration to the local compensation representative. In the case of employees of other federal establishments, vouchers should be submitted to the official superior of the injured employee. The local compensation representative or the official superior of the injured employee, as the case may be, is to see that the services rendered were properly authorized, that charges are itemized on the correct form and that the signatures on the voucher are proper. When the voucher is in proper form, he is to endorse it and transmit it to the United State Employees' Compensation Commission in Washington for payment.

Physicians should not submit vouchers direct to the United States Employees' Compensation Commission in Washington, since this will result in delay and expense, owing to the necessary returning of such vouchers to local compensation representatives or official superiors of injured employees for endorsement.

BIOLOGIC PHOTOGRAPHY

Today the great advances in medical science seem to depend largely on the ingenuity of inventors who prolong and project the senses of mankind. It would almost seem as if the human brain and the human eye unaided could proceed no further in their accomplishments. By the use of the microscope, vision is magnified thousands of times; by the use of the telescope it is prolonged thousands of miles; by the use of the cystoscope, the ophthalmoscope and similar devices it is projected into cavities that were formerly dark and obscure. With the x-rays and the various dye substances and devices that have been developed auxiliary to the x-rays, organs and tissues within the body are made apparent. Diagnosis has been greatly facilitated and much that formerly was left to imagination and guesswork is now susceptible of actual measurement and permanent record.

In the development of records as well, significant changes have occurred. In earlier times men made crude drawings of appearances which they wished to record permanently. Gradually medical art developed. The evolution of anatomic illustration, as described by Choulant, Frank, Garrison and many others, is one of the most interesting chapters in the history of medicine. Next came the use of photography for the making of permanent records, and, with the development of photography, colored illustrations, black and white motion pictures and colored motion pictures, which have successively been the focus of medical interest. Moreover, the possibilities of the use of illustrations in teaching have been extended by the development of the microscopic slide, the lantern slide, the stereoscopic illustration, the projectoscope, the bioscope and similar apparatus. By means of these devices medical teaching has been greatly facilitated. The future is sure to yield a vast amount of improvement beyond the results already available.

Another significant aspect of medical illustration is the development of photography for medicolegal purposes. The patient who comes to a plastic surgeon for repair and remodeling of a nose, the pinning back of flapping ears or the removal of an unsightly scar is not likely to remember after the operative procedure his appearance previous to the operation. The wise physician makes permanent photographic records of the evolution in the patient's appearance, so that the results of his work are clearly apparent.

The importance of photography as a means of recording specimens both in the living and in the dead subject cannot be overestimated. Photographs are accurate, impressive and easily interpreted. A good picture with a few words of description gives the reader an idea of the conditions actually seen better than a whole page of descriptive matter, even when written by a master in the use of words.

So rapidly has the interest in these phases of medical recording developed that there has existed for a number of years an association devoted to improvement in the art and technic of this practice. At the annual session of the Association of Biologic Photographers, just held, the topics discussed included intragastric photography, infra-red photography, the development of the surgical motion picture, the miniature camera and microcinematography. Photographic apparatus has been used for recording extraordinary motions and for making available records of the actions of organs within the body. Among the extraordinarily varied number of technicians now available in the medical field, the expert in clinical photography has an accepted position. No doubt the future development of the large hospital, the institution for investigation and the institution for medicolegal study will include, as an economic and scientific necessity, suitable equipment and personnel in this field.

Current Comment

EFFECT OF VITAMIN D ON CALCIUM CONTENT OF DENTIN

Controlled clinical experiments seem to indicate that therapeutic doses of vitamin D will both prevent and arrest dental caries when the lesions produced are apparently due to vitamin D or calcium deficiency.[1] It is assumed in explanation that the vitamin will increase the calcium content of the dentin and that such an increased calcium content will prevent or arrest caries. In a recent report Fish[2] records an unsuccessful attempt to alter the calcium content of the dentin of dogs by giving heavy doses of vitamin D and calcium over a prolonged period of time.

1. Mellanby, May: Diet and the Teeth: III. The Effect of Diet on Dental Structure and Disease in Man, Special Reprint Series, Med. Research Council 191, 1934.

2. Fish, E. W.: The Effect of Vitamin D on the Calcium Content of the Dentin, J. Physiol. **84**: 272 (June 18) 1935.

Three dogs from the same litter were used in his observations. Two teeth were excised from each animal at the beginning of the feeding experiment and the two symmetrically opposite teeth were removed at the end. A specimen of the dentin was prepared from each tooth and analyzed. Each specimen was freed mechanically from pulp tissue and from enamel and cementum and was prepared from the cervical part of the tooth. The pieces were dried at 105 C. for eighteen hours. This dry weight was therefore taken as a basis for calculation and the calcium content was expressed as the proportion of calcium oxide to this weight. The basic diet of raw meat, hounds' meal and water was continued with all animals, but calcium and large doses of vitamin D for varying periods were added. This regimen almost doubled the normal calcium content of the blood. Roentgenograms showed marked increase in opacity of the bones but no apparent change in the teeth. The chemical analysis of the dentin gave no significant increase in calcium content as compared with the preexperimental period. Definite as are these results for the period of about seventy days in dogs, the case against vitamin D cannot be considered definitely closed. The fact that a dog has a lower calcium content of dentin than man and that he is absolutely immune to dental caries raises the question as to whether the mechanisms involved are entirely similar physiologically. Doubt is thus thrown on the reliability of the fundamental assumption that caries is dependent on the calcium content of the dentin alone. Furthermore, caries is generally of slow development and it may be necessary to carry the crucial investigations over a period of years rather than of weeks.

INFANT MORTALITY IN NEW YORK A HUNDRED YEARS AGO

It has been generally assumed that the infant mortality rates must have been exceedingly high a hundred years ago and that a fairly continuous reduction has taken place since that time. Bolduan and Weiner [1] have recently attempted to determine the accuracy of that assumption when applied to New York City. The statistical data of that time are admittedly inaccurate and incomplete, but by the use of the so-called city inspectors' reports compiled regularly from the interment records of the various cemeteries it was found possible to approximate the number of infant deaths. Evidence exists also for believing that the birth rate at the time was about 40 per thousand. It was therefore possible to postulate statistics carrying a reasonable accuracy. A chart constructed from these statistics and extended by the more accurate recording of later years brings out the fact that from a relatively low infant mortality rate at the beginning of the nineteenth century the rate rose to a maximum during the sixties and that it thereafter declined. The evidence therefore indicates that in New York City the infant mortality rate at the beginning of the nineteenth century was probably no higher than it was at the opening of the present century. The factors affecting the rate were, of course, quite different at that time than at present.

1. Bolduan, Charles, and Weiner, Louis: Infant Mortality in New York City One Hundred Years Ago, J. Pediat. 7: 55 (July) 1935.

Association News

RADIO BROADCASTS

The American Medical Association will broadcast over the Blue network of the National Broadcasting Company at 5 p. m. eastern standard time (4 o'clock central standard time, 3 o'clock mountain time) October 1 and each Tuesday thereafter, presenting a dramatized program with incidental music under the general theme of "Medical Emergencies and How They Are Met." The title of the program will be Your Health. The program will be recognizable by a musical salutation through which the voice of the announcer will offer a toast: "Ladies and Gentlemen, Your Health!" The theme of the program will be repeated each week in the opening announcement, which informs the listener that the same medical knowledge and the same doctors that are mobilized for the meeting of grave medical emergencies are available in every community, day and night, for the promotion of the health of the people. Each program will include a brief talk dealing with the central theme of the individual broadcast.

The October schedule is as follows:

October 1. Burns, Morris Fishbein, M.D.
October 8. Hazards from Foreign Shores, W. W. Bauer, M.D.
October 15. Unconsciousness, Morris Fishbein, M.D.
October 22. Asphyxiation, W. W. Bauer, M.D.
October 29. Poisonous Plants and Insects, W. W. Bauer, M.D.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

CALIFORNIA

Hospital News.—The San Diego Hospital, San Diego, has changed its name, effective September 15, to "Hoffman Memorial Hospital," to perpetuate the name of the man in whose honor the hospital was originally dedicated. There will be no change in management or personnel.——Dr. Edouard S. Loizeau has been appointed superintendent of the San Diego County General Hospital, San Diego, to succeed Dr. Charles E. Sisson.

Society News.—Dr. Robert W. Meals, Los Angeles, discussed "Endocrinology from the General Practitioners' Standpoint" before the San Diego County Medical Society, San Diego, September 10.——At a meeting of the Alameda County Medical Association in Oakland, September 16, speakers included Drs. Homer W. Crane, Berkeley, and Herman V. Allington on "Spirillosis of the Lung" and "The Treatment of Acne Vulgaris," respectively.——Dr. Montague S. Woolf, San Francisco, addressed the Solano County Medical Society, September 10, in Vallejo, on "Commoner Diseases of the Anorectal Region and Their Treatment."——Dr. Lucius W. Johnson, captain, medical corps, U. S. Navy, discussed "Medicine and Surgery in the Fleet" before the Hollywood Academy of Medicine, September 19, and Dr. Paul E. Walker, assistant surgeon, U. S. Public Health Service, "Relation of the U. S. Public Health Service to Immigration."——Dr. Arthur S. Granger, among others, addressed the Los Angeles Society of Ophthalmology and Otolaryngology, September 23, on "Oil Tumors of the Lungs Produced by Intratracheal Instillation."

CONNECTICUT

Personal.—Dr. Edward J. Finn has been appointed health officer of Shelton, succeeding Dr. Francis I. Nettleton.——Dr. John D. Milburn has been named health officer of East Hampton, to succeed the late Dr. Frederick T. Fitch.

Milk-Borne Epidemics.—Two milk-borne outbreaks were reported to the state health department in June. In one, nineteen cases of paratyphoid B fever affected ten families among consumers of milk handled by a paratyphoid B carrier. The other was an outbreak of mild gastro-enteritis involving eighty-four persons, members of fifty-five families, all using milk from a dairy which supplied 300 quarts per day out of a total supply of about 4,500 quarts for the community. Investigation disclosed mastitis in some of the cows. In the last ten years, nineteen milk-borne outbreaks have been reported in Connecticut. Seven occurred in 1925 and the other twelve during the succeeding nine years at the rate of one or two each year,

with no outbreak in 1927. Of the seven in 1925, four were of typhoid, two of paratyphoid and one of septic sore throat. Of the twelve during the subsequent years, four were of scarlet fever, three of septic sore throat, three of typhoid, one of paratyphoid and one of undulant fever. The state health department points out that this list of outbreaks does not include the numerous instances in which one or two cases of undulant fever were traced to milk. The outbreak of undulant fever, which consisted of fourteen cases with three deaths, occurred in 1934 among users of one milk supply.

DISTRICT OF COLUMBIA

New Dean at Georgetown.—David V. McCauley, S.J., has been appointed dean of Georgetown University School of Medicine, succeeding Dr. William Gerry Morgan, who recently announced his retirement. Father McCauley was from 1928 to 1930 professor and head of the department of biology at Canisius College, Buffalo, N. Y. In 1931 he went to Jesuit Pontifical University, Woodstock, Md., as professor of biology and experimental psychology, and in 1934 was named regent of the Georgetown University Schools of Medicine and Dentistry.

Course in Public Health Teaching.—A four year integrated curriculum in public health teaching has been established at George Washington University School of Medicine, Washington, to parallel its curriculum in mental health established three years ago under Dr. William A. White. The public health course has been made a part of the regular medical course for the degree of doctor of medicine but is open also to special and graduate students in the public health field. Courses in community health, sanitation, hygiene, preventive medicine and the public health aspects of medicine and surgery are included. The faculty is composed of:

Dr. Roscoe Roy Spencer, Dr. Warren F. Draper, Dr. Walter L. Treadway, Dr. Royd R. Sayers, Dr. William C. White, Dr. Louis L. Williams, Dr. Raymond A. Vonderlehr, Dr. Estella F. Warner, Leslie C. Frank, C.E., Ralph E. Tarbett, B.S., Selwyn D. Collins, Ph.D.

Other new appointments to the faculty and staff for the coming year include those of Arnold K. Balls, Ph.D., as adjunct professor of biochemistry and Dr. Edward Lewis, assistant professor in pediatrics.

GEORGIA

Society News.—Drs. Rudolph A. Bartholomew, Atlanta, and Roy R. Kracke, Emory University, presented a paper entitled "The Rôle of the Hypercholesteremia of Pregnancy in Causing Vascular Changes in the Placenta, Predisposing to Infarction and Toxemia" before the Fulton County Medical Society, Atlanta, September 19. A symposium on proctology was presented September 5 by Drs. Marion C. Pruitt; Ward Beecher Duvall, George F. Eubanks Jr., Weldon E. Person, Charles E. Hall Jr. and Hulett H. Askew.——Dr. William L. Pomeroy, Waycross, read a paper on "Surgical Diseases of the Thyroid Gland" before the Ware County Medical Society, Waycross, September 4.

ILLINOIS

Typhoid Outbreaks.—Raw milk was responsible for three outbreaks in July, two of typhoid and one of gastro-enteritis, according to the state health department. More than thirty cases of typhoid with one death were reported at Grand Tower and Windsor, while twenty-five cases of severe gastro-enteritis occurred at Enfield (THE JOURNAL, August 17, p. 519).

Tests Show Drivers Unfit for Speeding.—Tests on 3,837 persons at the recent state fair in Springfield showed conclusively that the mental processes of nearly half of them are so slow that it is not safe for them to drive automobiles at high speed. The tests were conducted by the state health department as features of the exhibit on health and safety, to determine the skill of automobile drivers. One third of the persons tested required five-eighths second to apply the brakes on an automobile after a visual signal was given, while one in each ten tested required at least three-fourths second. The health department points out that, since at 60 miles an hour a car travels 88 feet per second, the importance of delayed mental response to an emergency situation is apparent. It further points out that motor accidents are now the cause of 2,500 deaths and more than 70,000 painful injuries annually in Illinois.

Chicago

Society News.—Officers of the Chicago Urological Society elected at the recent annual meeting are Drs. Benjamin E. Fillis, president; William J. Baker, vice president, and Colquitt Otis Ritch, secretary.——A symposium on the present concept of focal infection was presented before the Chicago Dental Society at a meeting, September 17; speakers were Dr. William P. Murphy, Boston, Boyd S. Gardner, D.D.S., Rochester, Minn., and Dr. Lloyd L. Arnold, who presented the views of the internist, dentist and bacteriologist, respectively.——Dr. Frank H. Lahey, Boston, will address the North Side Branch of the Chicago Medical Society, October 3, on "Newer Aspects of Hyperthyroidism and Hyperparathyroidism, Together with a Consideration of Total Ablation of the Thyroid."——Dr. Sarah A. Pearl will present a paper before the Chicago Council of Medical Women, October 4, entitled "A New Active Principle of Ergot and Its Clinical Significance."

INDIANA

State Medical Meeting in Gary, October 8-10.—The eighty-sixth annual session of the Indiana State Medical Association will be held in Gary, October 8-10, with headquarters at the Hotel Gary, under the presidency of Dr. Walter J. Leach, New Albany. The following physicians will participate, among others:

Isaac A. Abt, Chicago, Management of the Infant During the First Three Months of Life.
Ralph M. Waters, Madison, Wis., Inhalation Anesthesia: Newer Developments.
Norman F. Miller, Ann Arbor, Mich., Cesarean Section.
Louis J. Karnosh, Cleveland, Clinical Aspects of Frontal Lobe Disease.
Abe L. Schwartz, Cincinnati, Professional Anesthesia: A Hospital Plan in Operation Eighteen Years.
Virgil S. Counseller, Rochester, Minn., Some Changing Concepts Regarding the Endometrium and Their Significance.
Sanford R. Gifford, Chicago, Problems of Senile Cataract.
Elexious T. Bell, Minneapolis, Pathology of Tumors of the Breast.
William F. Braasch, Rochester, Minn., Recent Advances in the Treatment of Infections Involving the Urinary Tract.
Louis G. Herrmann, Cincinnati, Passive Vascular Exercise Method of Treating the Obliterative Arterial Diseases of the Extremities.
Emmet F. Horine, Louisville, Ky., Practical Management of Cardiovascular Emergencies.

In addition, the various section programs will be presented by Indiana physicians. At the annual banquet, Dr. Everett E. Padgett, Indianapolis, immediate past president, will receive the certificate of merit. Speakers will include Dr. James Tate Mason, Seattle, President-Elect, American Medical Association, on "The Work of the American Medical Association," and Dr. Karnosh, "Insanities of Famous Men." The annual golf and trap shooting tournaments will be played Tuesday morning, October 8. Entertainment will include luncheon, a buffet supper, smoker and stag party. The woman's auxiliary to the association will meet, October 8-9.

IOWA

Graduate Courses in Therapeutics.—The speakers' bureau committee of the state medical society opened its graduate course on general therapeutics in Davenport, September 13, to continue every Friday until November 15. Physicians presenting the lectures are:

George B. Eusterman, Rochester, Minn., Treatment of Gastro-Intestinal Disorders.
Roy. W. Scott, Cleveland, Modern Aspects of the Treatment of Hypertension.
William F. Braasch, Rochester, Minn., Treatment of Infections of the Genito-Urinary Tract.
Oliver S. Ormsby, Chicago, Diagnosis and Treatment of Common Skin Disorders.
Evarts A. Graham, St. Louis, Treatment of Diseases of the Gallbladder.
Walter Freeman, Washington, D. C., Diagnosis and Treatment of Neuroses.
Bernard Fantus, Chicago, Recent Advances in Therapeutics.
William P. Murphy, Boston, Modern Treatment of Anemia.
Ernest E. Irons, Chicago, Immunologic Therapy.
Howard L. Beye, Iowa City, Surgical Treatment of Diseases of the Lungs and Pleura.

A combined course in medicine and surgery opened at Cherokee, September 19, and will continue to November 21, presented by members of the faculty of the State University of Iowa College of Medicine. Courses have been started also at Charles City and Newton.

New Board in Basic Sciences.—The Iowa basic science law enacted by the forty-sixth general assembly became effective July 4. The first meeting of the board of examiners in basic sciences, appointed by the governor, was held in Des Moines, July 9. Members of the board are:

Joseph H. Bodine, Ph.D., professor and chairman, department of zoology, State University of Iowa, Iowa City.
Edward A. Benbrook, V.M.D., professor and head, department of veterinary pathology, Iowa State College, Ames.
Benjamin H. Peterson, Ph.D., professor and head, department of chemistry, Coe College, Cedar Rapids.
William L. Strunk, D.Sc., professor of biology, Luther College, Decorah.
Charles H. Carter, Ph.D., professor of biology, Parsons College, Fairfield.
Robert E. O'Brian, Ph.D., president, Morningside College, Sioux City.

At the meeting, July 9, Professor Strunk was elected chairman and Professor Benbrook, secretary. The new law requires that no member of the board shall hold a degree in any of the healing arts. The act does not apply to Christian scientists

or to those holding licenses in any of the healing arts or related professions in Iowa. Nor does it apply to students regularly registered, enrolled and in attendance as of July 1, 1936, in accredited schools of medicine, osteopathy or chiropractic in the state. With these exceptions, the law will affect all persons who hereafter apply for licenses to practice medicine or surgery, osteopathy and surgery, chiropractic or any other system or method of healing hereafter to be legalized in Iowa, who will be required to present a certificate of having successfully passed an examination in the six basic sciences, anatomy, physiology, chemistry, pathology, bacteriology and hygiene. The first examination will be held October 8-10. Iowa is the ninth state to enact a basic science law.

MICHIGAN

Society News.—Dr. Loren W. Shaffer was elected president of the Detroit Dermatological Society at its recent annual meeting.——Dr. Ira G. Downer, Detroit, addressed the Kent County Medical Society, June 27, on "Obstructive Lesions in the Kidney."——Dr. William A. Hudson, Detroit, addressed the Berrien and Cass County medical societies, July 24, on pulmonary tuberculosis.——The Muskegon County Bar Association was entertained by the Muskegon County Medical Society, August 23, at the first joint session in five years; speakers included Milton D. Schancutt, assistant attorney general of Michigan, on "Interdependence of the Medical and Legal Professions," and Harry Rogers, Grand Rapids, "Legal Aspects of Medical Problems."——Dr. Grover C. Penberthy, Detroit, addressed the first of the monthly fall meetings of the Calhoun County Medical Society, Battle Creek, September 3, on fractures. ——Dr. George L. Waldbott, Detroit, addressed the Oakland County Medical Society, September 18, on "Allergic Theory of So-Called Thymic Death and Its Practical Applications."

MISSOURI

Follow-Up Study of Encephalitis Epidemic.—Six persons who displayed physical signs of the continuance of encephalitis acquired in the St. Louis epidemic in 1933 were found during a recent follow-up study described in the annual report of the health commissioner. According to a newspaper account the study consisted of a physical examination and a questionnaire designed to reveal the immediate and lasting effects of epidemic encephalitis. This is the second follow-up study made. Although efforts to examine 874 patients were made, examinations of only 331 were reported. A total of 175 had symptoms of the disease in one form or another, it was stated, and eighty-two reported no complaints of any kind. Two persons have since died from other causes and one has become insane. Of those examined, 236 stated they were perfectly well before acquiring the disease; ninety-five were not. Since recovery seventy-nine are better, 111 are worse and 141 the same; 265 are now working and sixty-six were unable to return to their work, nearly one half of these being unable to find employment; 228 of the cases investigated were classed as severe, 103 as mild. One hundred and sixty-four persons reported they were suffering from nervousness and 135 said they were troubled with headaches. Food tastes for fourteen have changed and sixteen find difficulty in smelling; seventy experience trouble in walking and sixteen have suffered speech disturbances. Dizziness, fatigability, weakness, irritability, excitability and inability to concentrate are reported by a variable number. Sixty-five said they still suffered from sleeplessness. The results of the survey and further procedure will be studied at a meeting of the follow-up committee of the Metropolitan Health Council which is planned in the near future, it is reported. There were 221 deaths reported in the epidemic that occurred in St. Louis and St. Louis County during the summer and fall of 1933.

NEBRASKA

Agreement for Medical Relief Ends.—Cooperation of the Nebraska State Medical Association with the Nebraska Emergency Relief Administration in an arrangement to give medical service at reduced cost during the emergency created by the depression has been terminated by a new acting administrator of relief, who discontinued the services of the coordinator named by the association and announced that his office would deal directly with physicians. The association's committee on public policy and legislation in a statement in the *Nebraska State Medical Journal* said that physicians have worked harmoniously for a year with the relief administration under the former director under an agreement that was to run during the emergency or until either party had reason to withdraw. With the end of the emergency in sight, with the profession growing restless and a fear arising that the precedent is to be established and with the dismissal of the coordinator, the committee sees no reason for continuing efforts as a body at cooperation, according to the statement. Because of the inadequate provision for medical care in the relief budgets, the service has been unsatisfactory and of a type that the well trained physician does not care to render, it continued. The committee listed several complaints frequently heard from physicians participating in the arrangement. They included red tape, which was often irritating and prevented satisfactory service; establishment of precedent for payment of fees below the cost of the service; domination by welfare workers of a field in which they had no experience; gradual placement of all emergency cases on relief; service to unemployables, hence not an emergency problem; and building up a "riffraff" practice made up of persons expecting but not appreciating the service.

NEW YORK

Commission Studies Disease Control.—A special commission of New York physicians spent several weeks in August studying methods of controlling venereal disease in the Scandinavian countries. Members of the group were Drs. Thomas Parran Jr., Albany, state commissioner of health; John L. Rice, health commissioner of New York City; Thomas P. Farmer, Syracuse, chairman of the committee on public health and medical education of the Medical Society of the State of New York, and David J. Kaliski, representing the New York County Medical Society. Dr. Parran was to go on to Budapest to attend the Ninth International Congress of Dermatology and Syphilology as chairman of the United States delegation.

Health at Albany.—Telegraphic reports to the U. S. Department of Commerce from eighty-six cities with a total population of 37 million, for the week ended September 14, indicate that the highest mortality rate (15.4) appeared for Albany and the rate for the group of cities as a whole was 9.7. The mortality rate for Albany for the corresponding week of 1934 was 9.5 and the rate for the group of cities, 9.9. The annual rate for the eighty-six cities for the thirty-seven weeks of 1935 was 11.5, the same as for the corresponding period of last year. Caution should be used in the interpretation of these weekly figures, as they fluctuate widely. The fact that some cities are hospital centers for large areas outside the city limits or that they have large Negro populations may tend to increase the death rates.

New York City

Lectures for the Public.—Dr. Walter Bradford Cannon, George Higginson professor of physiology, Harvard University Medical School, Boston, will give the first of a series of lectures for the public at the New York Academy of Medicine, October 3. Dr. Cannon's subject will be "The Wisdom of the Body."

Society News.—A clinical session on chronic pulmonary diseases will be held in the amphitheater at Cornell University Medical College, October 2, under the auspices of the Tuberculosis Conference of Metropolitan New York. Dr. Dickinson W. Richards Jr. will speak on "Clinical Forms of Dyspnea and Their Treatment."

Kings County Afternoon Lectures.—The fall series of Friday afternoon lectures sponsored by the Medical Society of the County of Kings, Brooklyn, will begin October 4. Lectures for October will be:

October 4, Dr. Stanley S. Lamm, Convulsions in Infancy and Childhood.
October 11, Dr. Abraham S. Gordon, Chronic Arthritis.
October 18, Dr. Russell S. Fowler, Appendicitis: Acute and Chronic.
October 25, Dr. Thurston S. Welton, Common Obstetrical Problems.

Personal.—Dr. Oswald Swinney Lowsley, director of the department of urology at New York Hospital, on a recent trip to Mexico addressed the Merida Academy of Medicine in Yucatan on renal surgery and the Academy of Medicine of Mexico City on urologic surgery. He also conducted an operative clinic before members of the university faculty in Mexico City and was guest of honor at a dinner given by the Mexican Urological Association.

Research Program at Rockefeller Institute.—The Hospital of the Rockefeller Institute for Medical Research announces that diseases under investigation in its program for 1935-1936 will include aplastic, idiopathic pernicious or severe microcytic anemia; sprue or severe glossitis and stomatitis without anemia; nephritis in its initial stages, nephrosis, arteriosclerotic nephritis and hypertension in subjects under middle age; advanced heart failure in all age groups; early acute rheumatic fever and acute sore throat in rheumatic subjects; measles, chickenpox and encephalitis following measles, vaccinia, chickenpox, whooping cough or the common cold, and acute lobar and bronchial pneumonia, preferably in the early stages.

Physicians should communicate by telephone or personal application to the resident physician before sending patients to the hospital.

NORTH CAROLINA

Personal.—Dr. Coy C. Carpenter, professor of pathology at Wake Forest College of Medicine, has been appointed assistant dean.

First Graduate Assembly.—The Medical Society of the State of North Carolina sponsored the first of a series of graduate assemblies arranged by the committee on graduate study at Banners Elk, August 23-24. The entire session was devoted to study of gynecology and obstetrics, with the following speakers, among others:

Dr. Thomas V. Goode Jr., Statesville, Ectopic Gestation.
Dr. Robert A. Ross, Durham, Serum Tests for Pregnancy.
Dr. Paul W. Johnson, Winston-Salem, Elliott Treatment of Pelvic Infection.
Dr. Addison G. Brenizer, Charlotte, Ureteral Transplantations.
Dr. Hubert A. Royster, Raleigh, Tumors of the Breast.
Dr. Clyde M. Gilmore, Greensboro, Heart Conditions During Pregnancy.
Dr. Roy Hamilton Long, Morganton, Psychotic Manifestations Associated with Pregnancy, the Puerperium and the Menopause.

Similar sessions will be arranged for physicians in the central and eastern parts of the state, according to plans of the committee, of which Dr. Ronda H. Hardin, Banners Elk, is chairman.

PENNSYLVANIA

Personal.—Dr. Frank P. Strome, Ashley, has been appointed chief of the bureau of vital statistics of the state department of health to succeed Dr. Emlyn Jones, Johnstown.——Dr. James J. O'Connor, Barnesboro, was appointed medical director of Cambria County, August 1, to succeed Dr. William E. Matthews, who had served forty-six years.——Drs. Charles Seaton Hendricks, Altoona, and Charles S. Duttenhofer, Churchtown, were recently advanced to the grades of lieutenant colonel and major, respectively, in the 103d Medical Regiment, Pennsylvania National Guard.

Society News.—Speakers before the west section of the Fifth Councilor District Medical Society at Piney Mountain Inn, Adams County, July 18, included Drs. Clarence R. Phillips, Harrisburg, "A Résumé of Health Legislation in Pennsylvania, 1935 to 1937"; George L. Laverty, Harrisburg, "Emergency Medical Relief—A Coordinate Project"; Ruth H. Weaver, Philadelphia, "Prenatal and Maternal Care," and Richard A. Kern, Philadelphia, "Clinical Allergy."——Drs. Max Levin and John Moore Campbell Jr. addressed the Dauphin County Medical Society, Harrisburg, September 3, on "Delirium" and "Epidemiology of Poliomyelitis in Pennsylvania," respectively.——Dr. Walter E. Dandy, Baltimore, addressed the Harrisburg Academy of Medicine, September 17, on "Diagnosis and Treatment of Lesions of the Cranial Nerves."——Dr. William L. Mullins, Pittsburgh, spoke on "Cardiac Emergencies" before the Fayette County Medical Society, Uniontown, September 5. Drs. Jesse O. Arnold II, George W. Ramsey and James W. McKennan, Washington, addressed the society, August 1, on heat therapy.——Dr. Jacob Hoffman, Philadelphia, addressed the Lycoming County Medical Society, September 13, on "Diagnosis and Treatment of Functional Menstrual Disorders of Endocrine Origin." At the annual outing of the society at Highland Lake, August 9, Dr. James R. Rankin, Muncy, was elected "Nestor" of the society, having reached the age of 75 and having practiced fifty years. He received a leather bound album containing his picture, history, and the autographs of the members.——Dr. Maurice Brodie, New York, addressed the Main Line Branch of the Montgomery County Medical Society at Haverford, September 9, on "Poliomyelitis: Epidemiology and Immunization," and Dr. James P. Leake of the U. S. Public Health Service, Washington, D. C., discussed the recent epidemics in the South Atlantic states.

TENNESSEE

Community Hospital Opened in Kingsport.—The Holston Valley Community Hospital, Kingsport, with fifty-three beds and eight bassinets, was opened August 9. The new hospital is the seventh sponsored by the Commonwealth Fund of New York in its rural hospital program, under which the fund furnishes about three fourths of the cost on condition that the community provide the remainder of the cost of building and equipment, furnish the site and undertake operating expenses. The Kingsport project cost $300,000 and includes a separate home for twenty-five nurses. George W. Eutsler is director of the hospital and Dr. Thomas B. Yancey, Kingsport, chairman of the medical staff, which includes twenty-seven physicians in the hospital area. A hospital service plan offering hospital care to groups of employees for as much as twenty-one days a year for regular payments of 75 cents a month has been announced. The benefits include maternity care after ten months' membership but do not apply to conditions provided for under workmen's compensation laws, chronic diseases or conditions known at the time of application to require hospitalization. At the opening exercises addresses were made by Judge E. T. Carter, Gate City, Va., of the circuit court of southwest Virginia; Dr. Eugene L. Bishop, Nashville, director of health of the Tennessee Valley Authority, and Mr. Barry C. Smith, general director of the Commonwealth Fund. Rural hospitals previously built by the Commonwealth Fund under the same plan are at Murfreesboro; Farmville, Va.; Glasgow, Ky.; Farmington, Me.; Beloit, Kan., and Wauseon, Ohio.

WEST VIRGINIA

Veteran Physician Honored.—The Barbour-Randolph-Tucker County Medical Society observed the ninety-ninth birthday of Dr. John Woodbridge Bosworth, Philippi, September 3, with a special meeting at Philippi. Dr. Charles B. Williams, Philippi, son-in-law of Dr. Bosworth, presided. Dr. Bosworth was born at Beverly, then in Virginia, in 1836, according to family records. He graduated from Virginia Military Institute and was attending Jefferson Medical College, Philadelphia, when the Civil War opened. After the war he settled in Philippi and practiced until about five years ago. Several years ago he was made an honorary member of the Barbour-Randolph-Tucker society.

PUERTO RICO

Personal.—Joseph H. Axtmayer, Ph.D., has recently returned to the School of Tropical Medicine of the University of Puerto Rico, conducted under the auspices of Columbia University, after a year of research in biologic chemistry at the University of Rochester, and Mr. Luis Hernández from special study in clinical pathology at the University of Michigan Medical School, Ann Arbor. Other members of the faculty who are studying in the United States and Europe include Dr. Enrique Koppisch of the department of pathology, who is at Basel, Switzerland, studying filtrable viruses on a fellowship from the Rockefeller Foundation; Mr. Luis M. González, at the Henry Phipps Institute of the University of Pennsylvania, Philadelphia, for study of tuberculosis; Mr. Americo Pomales-Lebrón at the University of Michigan for a doctorate in bacteriology; Dr. Rafael Rodriguez-Molina and Mr. Felix Lamela, at the University of Chicago for courses in hospital management and administration.

GENERAL

License Lost.—Dr. Russell M. Gray, Indio, Calif., has reported that his license to practice medicine in California has been lost or stolen from his office at Indio. The number of his license, issued Aug. 11, 1927, is A-04497.

Saleswoman Is Impostor.—A woman using the name Kate C. Adams is reported to have taken orders in Jamestown, N. D., for uniforms, posing as a representative of the Maid-Rite Uniform Company, 3717 Monmouth, Cincinnati. She carried a sample uniform and a catalogue and collected an advance payment on orders. Investigation by her victims in Jamestown revealed that there is no such firm in Cincinnati.

Society News.—The forty-third annual meeting of the Association of Military Surgeons of the United States will be held in New York, October 3-5, at the Waldorf-Astoria, under the presidency of Dr. William Seaman Bainbridge, New York. Brig. Gen. Frank T. Hines, Administrator of Veterans' Affairs, Washington, D. C., will be a guest speaker.——The annual convention of the American Red Cross will be held in Chicago, May 11-14, 1936.

Fraudulent Salesman.—A Utah physician reports that he ordered a suit of clothes through a salesman who claimed to represent the "Mastercraft Tailoring Company, Inc.," of Durham, N. C. The physician paid $1.75 as a down payment, the remainder of the cost to be paid on delivery of the suit. When the suit did not arrive in a reasonable time, he wrote to the firm and his letter was returned with the information that such a firm did not exist in Durham. The salesman used the name H. B. May.

Casselberry Prize to Be Awarded.—The secretary of the American Laryngological Association, Dr. James A. Babbitt, Philadelphia, announces that the Casselberry Prize of $500 is open to competition for work in laryngology and rhinology. The award was established by the late Dr. William E. Casselberry, Chicago, who left a fund to the association, the interest from which was to be awarded in sums of $500 or less for a prize award, a decoration or the expense for original investi-

gation in laryngology and rhinology. Theses or reports of work must be in the hands of Dr. Babbitt, 1912 Spruce Street, Philadelphia, before February 1 of any given year.

Impostor Poses as Poliomyelitis Expert.—From Lexington, Ky., comes a report of a man who appeared in the town September 2 posing as a representative of the U. S. Public Health Service investigating the poliomyelitis outbreak in Kentucky. After registering at the Phoenix Hotel under the name "Dr. Robert Coldwell" and explaining that he came from Johns Hopkins Hospital, Baltimore, as a special representative of the federal health service, the man visited the county health officer, who took him on an "inspection trip" in Lexington and to Paris, where the impostor said he would set up an organization. He carried a brief case filled with medical and health literature and displayed hypodermic syringes, mentioning frequently the number of spinal punctures he had made on afflicted children. With the chairman of the board of governors of the Lexington unit of the Shriners' Hospital for Crippled Children, who is also the manager of the Phoenix Hotel, "Coldwell" visited the hospital. While there he asked if the public health service was paying the hospital an allotment of $1.42 per capita for the care of indigent children with poliomyelitis, said that there must be some oversight in the matter and that he would communicate with the surgeon general about it. Suspicion was soon aroused by his activities and verbosity, especially when it was found that he had had a local printer make up some report cards for him headed "Special Memo, United States Public Health Service." Meanwhile he had cashed checks amounting to $55 at the hotel. A telephone call to the bank revealed that "Dr. Coldwell" had no account, another to Johns Hopkins that he had not been employed by the hospital and a telegram to the public health service that he was not an official representative. About two hours before it was decided to have the man arrested he disappeared, leaving some syringes and vials of so-called serum in his room. Later it was learned that a man of his description had been in Louisville the previous week, working at Red Cross Headquarters, where he said he was organizing a group of nurses to operate from Berea in preventing spread of poliomyelitis in southeastern Kentucky. This man is about 40 years old, 5 feet 9 inches tall, smooth shaven, with a full face and Roman nose. Later investigation by the public health service revealed that in 1931 the state health officer of Ohio reported a "Dr. Robert Caldwell," who had concerned himself with an investigation of a typhoid epidemic at the State Hospital for the Insane at Cleveland, claiming to be a special representative. At that time it was reported that the man had never been employed by the service.

CANADA

University News.—The University of Toronto Faculty of Medicine will offer a two weeks course in pediatrics to the physicians of Canada, November 4-16.——The University of Manitoba Faculty of Medicine presented a graduate course in cooperation with the Manitoba department of health September 9-14; among speakers were Drs. Jonathan C. Meakins, president of the Canadian Medical Association, and William V. Cone, Montreal; Robert I. Harris, Toronto, and George J. Wherrett, Ottawa, executive secretary of the Canadian Tuberculosis Association.

Personal.—Dr. William A. Scott, assistant professor of obstetrics and gynecology, University of Toronto Faculty of Medicine, has been appointed head of the department, to succeed Dr. William B. Hendry, who recently resigned.——Dr. Robert M. Benvie, Stellarton, was elected president of the Medical Society of Nova Scotia at the annual meeting in Sydney, July 3-4, and Dr. Harry G. Grant, Halifax, secretary.——Dr. Allan Roy Dafoe, Callander, Ont., received the Order of the British Empire from King George V in the list of honors issued on the occasion of the king's birthday and his silver jubilee.——Dr. Joseph L. Jackson, assistant professor of anatomy at the University of Manitoba Faculty of Medicine, has been appointed professor of anatomy at the University of Saskatchewan School of Medical Sciences to succeed the late Dr. Robert T. McGibbon.

CORRECTION

Agranulocytosis.—In the special article entitled "Agranulocytosis," by Roy R. Kracke and Francis P. Parker (THE JOURNAL, September 21, page 960), there appears a list of American proprietary preparations that did or do contain amidopyrine. The list was in error in including Analgia and Antabs, both of the William S. Merrell Company, because these two preparations do not contain and never have contained amidopyrine, according to a statement from the firm.

Government Services

Changes in Public Health Service

Drs. James P. Leake, Lawrence Kolb and Hermon E. Hasseltine have been promoted and commissioned as medical directors in the regular corps of the service. Dr. Hasseltine was recently relieved of his duties at San Francisco and assigned to Carville, La., in charge of the marine hospital. The promotion and commission of the following physicians as senior surgeons in the regular corps has also been announced: William S. Bean Jr., Gleason C. Lake, Thomas B. H. Anderson and Herbert A. Spencer.

Examination for Psychiatric Position

The U. S. Civil Service Commission announces an open competitive examination for a position as psychiatric medical supervisor for the Department of the Interior to have charge of the 300 legally adjudged insane of Alaska, confined in Morningside Hospital, Portland, Ore., which is operated under contract with the United States. The position carries a salary of $5,600 a year, subject to a deduction of 3.5 per cent toward a retirement annuity. Applicants must have graduated from a recognized medical school, must have had either a regular rotating or a psychiatric internship of one year or experience considered equivalent to such internship and must have had not less than five years of responsible and progressive specialized experience in neuropsychiatry, of which at least three years must have been in a senior administrative capacity in a mental hospital with a daily average of not less than 300 patients under their care. They must not have reached their fifty-third birthday and must be in sound physical health. Further details and application forms may be obtained from the secretary of the Board of Civil Service Examiners at any first class postoffice, from the commission at Washington, D. C., or from the district offices of the commission at Atlanta, Boston, Chicago, Cincinnati, Denver, New Orleans, New York, Philadelphia, Seattle, St. Louis, St. Paul, San Francisco, Honolulu, Balboa Heights, C. Z., or San Juan, P. R. Applications must be filed not later than October 6.

Department of Vital Statistics Reorganized

With the completion of the primary objective of the department of vital statistics of the U. S. Bureau of the Census, namely, the extension of birth and registration areas which has been its concern for about thirty-five years, a reorganization is now under way to undertake new tasks. In 1933, on the completion of this work with the admission of Texas, the joint advisory committee of the director of the census took steps to explore the various questions and problems involved. A report of this study points out that "while it is still necessary to work for more complete and accurate recording of the facts as to births and deaths, new and intensive efforts can be devoted now to analytical treatment of the data and to the presentation of more refined results. A better statistical basis for public health work will be laid, and for all studies of population structure and changes." The appointment of new supervisory personnel in charge of each of three important types of functions within the division is announced, following the recommendations contained in the report. Dr. Halbert L. Dunn, formerly director of the University of Minnesota Hospitals and professor of biometry, University of Minnesota Graduate School of Medicine, Minneapolis, has been placed in charge of the division as chief statistician. He will also have charge of research and analytic developments which are also included in the report's recommendations. Dr. John Collinson Jr., recently registrar of vital statistics for the state of Maryland and secretary, American Association of State Registration Executives, as assistant chief statistician, will be in immediate charge of the development and perfection of registration and of relations with state health officers and registration officials. A technical assistant to the chief statistician will be appointed to have immediate charge of the classification and coding of causes of death, the development of the joint manual, representation of the division respecting changes in the International List, and relations with medical schools and the medical profession. Forrest E. Linder, Ph.D., who resigned from a position with the Worcester (Mass.) State Hospital, will assist in the development of the program. Six field agents will be appointed, and the districting of the United States for this purpose is proposed. Dr. Timothy F. Murphy, the present chief statistician, has been appointed to take charge of a newly established division of religious statistics, general information and records.

Foreign Letters

LONDON

(From Our Regular Correspondent)

Aug. 31, 1935.

The Campaign Against Noise

In a previous letter, the formation was reported of the Anti-Noise League to combat the growing torment of noise, which is injurious both to the sick and to the well. The movement began about two years ago with a letter to the *Times* by some well known persons, including members of the medical profession such as Lord Horder, Sir James Purves-Stewart (neurologist) and Dr. Dan McKenzie (otologist), asking for assistance in the formation of the league. The response was excellent. The revolt against noise has crystallized into a campaign supported by thousands of people. The report, which has just been issued, states that the league had to meet two criticisms. It was stated that noise had always existed in cities. The reply is that traffic noises have grown more penetrating, more strident and more unrhythmically continuous in the last twenty years. The second criticism was that the ill effects of noise on human beings cannot be scientifically assessed. But medical experts testify that the noises of modern civilization produce nervous disorders.

The main difficulty in taking effective action is that there is no simple generally accepted instrument for measuring noise outside the laboratory. Such an instrument would no doubt facilitate the enforcement of the law, but an enlightened public opinion insistent on action and the cooperation of experts who understand the causes of noise with the public who suffer from its effects are the aims to be achieved. Universal support has been given to the league by the press, eminent writers, the National Physical Laboratory, the Ministry of Transport, the Ministry of Health, the Royal Institute of Architects, the British Broadcasting Corporation, and industrial firms and others engaged in research as to noise. The government has issued a regulation prohibiting the sounding of motor horns in the hours of the night, but the problem of this evil is not yet solved. At the Oxford conference of the league a resolution was carried aiming at abolition of motor horns altogether except in cases of emergency. It is claimed that the loud and strident horns in use encourage the habit of "driving on the horn" and are responsible for many accidents. Many local authorities have adopted a new model by-law to control wireless loud speakers, phonographs and street musicians. The Westminster city council permits the cost of silencers on road drills to be added to quotations for road breaking. Milk distributors are cooperating by replacing milk carts by silent electric vans and pneumatic-tired horse vans, and rubber devices are being used in glass and metal containers. Railway companies are taking steps to reduce the blowing of whistles and to deaden the noises of platform trucks by the use of rubber linings.

Crank Medical Cults in England

Sir Ernest Graham-Little (dermatologist and member of parliament) has done good service by his exposure, in communications to the *British Medical Journal*, of some of the crank medical cults that exist in England. The "Medical Herbalists" publish a monthly journal described as the organ of the "National Association of Medical Herbalists of Great Britain," who have in London what they call the "College of Botanic Medicine." This appoints "an education committee" of which four "principals" (none medically qualified) are said to give instruction in "anatomy, physiology, materia medica and therapeutics, pathology and physical diagnosis, diseases of women and children, and chemistry." There is further a system of postal tuition in these subjects, forming part of the course leading to the issue of "qualifications" to practice. On the passing of examinations, "degrees" enable the herbalist to put L.C.B.M. and M.N.A.H.M. after his name. There is also a still higher "degree," D.B.M. (Doctor of Botanic Medicine) to be obtained on presentation of a "thesis" and payment of a fee of $125. The same amount is payable for the course. The dangerous nature of this cult is shown by the number of coroners' inquests in which herbalists figure. But this is a free country and they seldom are even censured. The only thing that can bring them within the grip of the law is representing themselves to be qualified physicians, which they avoid.

Another cult is the "Naturopaths," who since 1934 have established a "register," which is claimed "to protect the public and the fully trained naturopath from those who with inadequate knowledge claim to practice as nature-cure physicians." In a printed form of registration issued by this body, an applicant is asked to specify types of treatment which he gives and the following are cited as examples of such treatment: "psychoanalysis, colonic lavage, electrotherapy, biochemistry, herbal medicine, orificial surgery." A circular issued with the application form reads: "Our standard of professional education is four years' full-time training with clinical experience. As the profession is still young, however, it has been impossible for many now in practice to obtain such complete equipment. We are therefore following the example set by other young professions and accepting proportionate experience in practice in lieu of a certain amount of training." It seems to be a common form with the irregular cults (probably in imitation of the most blatant of them—osteopathy) to name four years' training (usually fictitious) as the basis of "professional education." But no mention is made of the school where the applicant for registration in "naturopathy" can get his training.

The most successful of all the cults in capturing the British public is osteopathy, an American importation. The British School of Osteopathy, founded in 1917, posed as giving its "graduates" a four years course until its devastating exposure, which was described in THE JOURNAL. The first two years was declared to be "the same course as medical students take" and "the dean" received the honor of publication in the *Times* of a half-column letter in large print.

Sir Ernest Graham-Little thinks that the present rage for setting up "registers" of these irregular practitioners deserves the attention of the medical profession. He has drawn the attention of the minister of health to the scandal of these schools fraudulently pretending to qualify persons to practice various branches of medicine and surgery and has received his promise to look into the matter.

Assistance to Scientists the Victims of Political Persecution

The annual report of the Academic Assistance Council, formed under the presidency of Lord Rutherford to assist the scientists and scholars the victims of political persecution on the continent who have been deprived of their means of living, has been issued. Up to June 1935, out of 1,300, 650 left Germany and of these 287 are now permanently placed. Of the 287, seventy-six are workers in medicine or its ancillary sciences, forty are chemists, thirty-seven are economists, twenty-five are physicists and twenty are mathematicians. Of those permanently placed, seventy-six are in the United States, fifty-seven in Great Britain, thirty-eight in Turkey and thirty in Palestine. Temporary placements of 336 have been effected, of which 155 are in Great Britain, a larger number than in any other country. The next largest number is fifty-eight in the United States. Of the temporary placements, sixty-seven are of medical workers. During the year the council received in donations and subscriptions (mainly in small sums) $100,000 and grants from Jewish charitable organizations to the extent of $17,500. The council proposes to end its emergency grants

by July 1936, though it recognizes that even then some deserving scholars and scientists will not have been reestablished. It is felt that to continue emergency work beyond three years would be difficult to justify. But, if sufficient financial support is available, the council hopes to establish a limited number of research fellowships to maintain in this country workers of special distinction or promise, particularly in the humanities and subjects in which it is difficult to find semipermanent positions elsewhere.

Protection Against Air Raids

In a previous letter, arrangements recommended by the government for the protection of the civilian population against air raids were reported. The subject is considered so important that a series of publications is to be issued. One has just appeared on Treatment of Casualties and Decontamination of Personnel. The first step recommended is to draw up a general plan for each district. This is primarily a matter of forming the appropriate organization and preparing lists and schedules of buildings and equipment required. Next comes training of personnel and finding what equipment is needed to supplement that already available. The government will arrange to supply respirators, protective clothing and bleaching powder. The memorandum distinguishes four classes of patients who may require attention: (1) those suffering from injuries due to bomb explosions or fire, but not affected or contaminated with gas; (2) those suffering from such injuries and also affected or contaminated with gas; (3) those who require treatment because they have inhaled gas or whose skin has become contaminated with gas; (4) those who do not require medical treatment but whose clothing has been contaminated with gas. It is recommended that all should be dealt with by a single organization, which would combine the normal type of ambulance and hospital service for the treatment of accidents, with special arrangements for dealing with gas contamination of persons and their clothing.

The following organization is outlined: 1. Mobile first aid parties, for dispatch to any place where air raid casualties have occurred. 2. First aid centers and decontamination centers (preferably combined) to which persons with minor injuries or suffering slightly from gas or with contaminated clothing can proceed independently for treatment and, if necessary, change of clothing. 3. Casualty clearing hospitals, to which more serious cases could be taken by ambulance and, if not fit for immediate transfer to base hospitals, detained and treated. 4. Base hospitals situated, so far as possible, outside areas of special danger, for cases evacuated from casualty clearing hospitals as soon as fit to be moved. Separate base hospitals may be impracticable in some cases. 5. An ambulance service for use in conjunction with first aid parties and for the movement of stretcher cases from first aid centers to casualty clearing hospitals and from these to base hospitals. 6. Laundry services for decontamination of clothing. 7. A clerical organization for keeping records of casualties, their property and valuables, and their places of treatment.

The manning of the various services will require special staffs. For preference, men under 25 should not be enrolled. So far as possible the first aid and decontamination centers should be selected in advance and the personnel trained. Arrangements should also be made in advance for supplementing, in case of need, the nursing staff of hospitals selected as casualty clearing hospitals and supplementing or perhaps creating staffs of base hospitals. Arrangements for anti-gas instruction of these nurses should be made wherever possible. On a threat of air attack, beds in casualty clearing hospitals should be freed by removal to outlying hospitals, existing or improvised, of all patients who can be removed with safety. Thereafter no patients, whether air raid casualties or not, should be accepted for lengthy treatment, unless unfit to be taken elsewhere. Following a raid no casualties fit to be removed to base hospitals should be retained in casualty clearing hospitals.

In rural areas, reliance for first aid should be primarily placed on the local physicians and district nurses and the local Red Cross society. This might be supplemented by mobile first aid parties from neighboring towns. County councils are recommended to plan out large areas for the organization of complete schemes providing for casualty clearing and base hospitals, the latter to be shared, possibly, with a neighboring county or borough group. It would be important to organize mobile first aid parties, with motor transport, in suitable centers, which would cover surrounding districts. Every village should have a call on two or even three first aid parties in a prearranged order.

Tuberculous Milk

The problem of obtaining a milk supply free from tubercle bacilli has so far not been solved. Dr. G. M. Fyfe, health officer for St. Andrews, states in his annual report that about 40 per cent of the cows in the country are infected with tuberculosis and that about one cow in 500 is suffering from tuberculosis of the udder and therefore is producing milk containing the bacilli. In Scotland about 9,000 cases of tuberculosis in man are notified annually. Research has shown that about 4 per cent of persons suffering from tuberculosis of the lungs are infected with bacilli of bovine origin and that for tuberculosis of the bones the incidence is as high as 50 per cent and of the lymphatic glands 85 per cent. Dr. Fyfe states that measures for the eradication of tuberculosis from dairy herds are alarmingly defective. The schemes in force are voluntary and are undertaken only by a few enlightened dairymen.

PARIS

(From Our Regular Correspondent)

Aug. 9, 1935.

Reinforcement of the Immunizing Action of Toxins and Antitoxins

Guinea-pigs and rabbits in laboratory work can be immunized by the injection of the diphtheria and tetanus anatoxins. G. Ramon and Lemetayer, in a paper read at the May 6 meeting of the Academy of Sciences, call attention to the fact that this immunity can be greatly increased by adding to these antigens such substances as tapioca, cholesterol and hydrous wool fat. One can immunize rabbits against tetanus by means of a single dose of unmodified tetanus toxin in hydrous wool fat. The authors have attempted recently to apply these principles to the antitetanic immunization of domestic animals such as the horse and sheep. In the production of antitetanus serum, this method, utilizing either the toxin or anatoxin, will greatly shorten the time necessary to immunize the animal from which the serum is to be obtained. Using anatoxin, their method will greatly facilitate the vaccination of domestic animals against tetanus, the immunity thus obtained taking place more rapidly and being of longer duration than is at present possible.

Theory on Etiology of Eclampsia

At the June 4 meeting of the Academy of Medicine, Metzger stated that eclampsia was the result of abnormal mobilization of proteins. To provide for the needs of the fetus, the mother builds up reserves in her tissues. When the fetomaternal symbiosis ceases to be "harmonic," the nitrogenous reserves suddenly enter the maternal circulation and the result is eclamptic convulsions.

Recent research on the polypeptides enable one to understand such accidents. Disintegration of the tissue albumins produces the polypeptides. Hepatic and renal insufficiency result in inability of these viscera to destroy and eliminate the polypeptides. Edema also plays an important part in the distur-

bances of protein metabolism. It is probable that the nitrogen content of the blood throughout pregnancy is low, because the maternal organism constantly utilizes the proteins to build up its reserves.

Metzger reported a case which in his opinion confirms the preceding theory. At the end of six and a half months the patient suddenly ceased to feel fetal movements. Edema of the face and legs, headache, a blood pressure of 180 mm. of mercury and marked albuminuria were noted on admission to the hospital eight days later. The uterus was emptied and a dead, very edematous macerated fetus was found. The placenta was very thick. About twelve hours after the operation the patient, who had voided scarcely 500 cc. of urine in twenty-four hours, suddenly passed 2,000 cc. containing a large amount of albumin. There was only a trace forty-eight hours later, and the albumin and edema had completely disappeared at the end of three days. This is an example of protein intoxication. There was an effort to eliminate the albumin as soon as the fetal death took place, then retention with aggravation of the general condition, followed by massive elimination of albumin and recovery. The death of the fetus does not mean that of the placenta. In this case the placenta was found edematous, the fetal circulation being interrupted by vascular changes in and persistence of the epithelial covering of the villi (Langerhans cells). Metzger thinks that the fetomaternal metabolism is of placental and not of fetal origin. When the placenta is normal, its death occurs simultaneously with that of the fetus. If the placental vitality is abnormal or pathologic, complications cannot be avoided and may necessitate rapid emptying of the uterus. The hypophysis mobilizes the metabolism but the placenta acts in a regulatory capacity.

Use of Spinal Cord of Animals for Nerve Grafting

The advantages of direct end-to-end suture of divided nerve trunks is the ideal method, but one encounters cases in which there is so much destruction that some form of graft must be employed. Up to the present time, only nerve segments from rabbits, calves or dogs have been used as heteroplastic grafts. The failures in most cases were due to imperfect aseptic technic and to the large amount of fibrous tissue that develops between the severed nerve ends, thus rendering the graft impermeable.

Gosset and Ivan Bertrand have attempted to find a tissue with less fibrous elements so that the nerve fibrillae might penetrate it more easily. They also tried to obtain some tissue containing as much myelin substance as possible. The results of their experiments were reported at the June 26 meeting of the Société de chirurgie. As grafts they employed portions of the dorsal spinal cord, chiefly because of the parallel nerve fibrillae and relatively small amount of fibrous tissue. The experiments were carried out on adult rabbits and rats. After removal of the segment of spinal cord needed for the graft, the latter is immediately placed in a 10 to 20 per cent formaldehyde solution to prevent retraction of the removed segment. The coverings of the latter are removed on the following day. A young dog weighing 20 Kg., in which the sciatic nerves had been severed, first on one side and then on the other, was employed for the first experiments, in which spinal cord grafts taken from a rabbit were utilized. Six weeks later, both the functional and the electrical results showed complete restoration of the severed sciatic nerves. A portion of the spinal cord graft, on histologic study, revealed the fact that the graft had been penetrated by newly formed nerve fibrillae from the proximal segment of the divided sciatic nerve, thus preserving the general pattern of the proximal nerve trunk. In recent traumatic nerve lesions or in cases in which the presence of a neuroma necessitates the removal of a relatvely large segment of an important nerve trunk, the use of this form of graft should be borne in mind.

Peritonitis Due to Calculous Pyonephrosis

At the June 15 meeting of the Société de chirurgie, R. Couvelaire reported a case in which a woman, aged 40, had acute abdominal symptoms of twelve hours' duration. The pain had been felt at the onset in the right upper quadrant but soon became diffuse. Similar attacks had been noted during the preceding three months, accompanied by painful urination and urgency. On admission the pulse was 130, the temperature was 103 F. and there was generalized abdominal rigidity, but none over the kidney regions. The preoperative diagnosis was diffuse peritonitis due to perforation of either the gallbladder or the appendix, but both of these were found normal at the exploratory operation, which revealed a diffuse suppurative peritonitis. A mass was felt filling the right iliac fossa, from which pus was escaping through a perforation of the overlying peritoneum. A right nephrectomy was performed. The examination of the specimen revealed a large calculous pyonephrosis with a perforation at its upper pole into the peritoneal cavity. In the discussion, Fey added two similar cases, one due to rupture of a large renal abscess and the other of a pyonephrosis. In both, there was a diffuse peritonitis.

Huet reported a case in which a large pyonephrosis had ruptured into the peritoneal cavity.

Comparative Value of Lumbar and Suboccipital Puncture

Certain syphilologists, especially Sézary, have recently advocated suboccipital puncture for the examination of cerebrospinal fluids in syphilis of the central nervous system. Guillain and Mollaret read a paper at the May 24 meeting of the Société médicale des hôpitaux de Paris in which they failed to see any advantages in the suboccipital over the lumbar method of puncture. They compared the results of the examination of the fluid obtained by these two methods. Such a comparison must first of all be based on the position of the patient at the time the puncture is made. If the patient is in a straight sitting position, the fluid obtained is of cranial origin; if the patient is sitting but leaning forward in the position used for lumbar puncture, the fluid is entirely of spinal origin, whereas, if it is obtained while the patient is lying on the side, the liquid is cerebrospinal. These observations are the result of pressure studies on human beings and on monkeys, which reveal the fact that gravity is the chief factor controlling the escape of cerebrospinal fluid. Other factors, such as respiration, play a subordinate part. Under normal conditions the liquid obtained by lumbar puncture is twice as concentrated in human beings as is that by suboccipital puncture. It is three times more concentrated in monkeys. The albumin content and the colloidal benzoin reaction differ in the liquid obtained by suboccipital and by lumbar puncture. A comparison of the ventricular and lumbar puncture liquids shows still more difference. Suboccipital puncture is followed by serious accidents, such as puncture of the medulla or of arteries such as the vertebral and postero-inferior cerebellar. Death may follow suboccipital puncture. These sequelae are rare but must not be overlooked. Lumbar puncture is the only method that yields information as to the condition of the spinal cord and cauda equina in syphilis. The lumbar method is to be especially recommended in agitated and emotional patients, for children and for private practice.

In the discussion, Cathala stated that he had seen two deaths following suboccipital puncture and believed it should be employed only in unusual cases. Tzanck reported an epileptic attack following suboccipital puncture. Basch, on the other hand, had employed the latter method in 140 cases without accident. He preferred it to lumbar puncture in syphilis and advocated the use of needles of fine caliber. Flandin warned against suboccipital puncture in cases of suspected brain tumor. He had observed only one fatal result in 1,000 suboccipital

punctures. In this instance the patient had a generalized syphilitic arteritis and died three days after the puncture.

The suboccipital method is more difficult and requires much experience.

Pinard endorsed the views of Guillain and Mollaret as to neurologic cases but preferred the suboccipital method in cases of syphilis, especially in ambulatory patients. He had never observed an accident in more than 600 suboccipital punctures.

De Gennes reported a death from meningeal hemorrhage twenty-four hours after a suboccipital puncture. This method should be seldom employed, owing to danger of injury to one of the vessels.

Guillain stated, in closing, that statistics show one death to 10,000 suboccipital punctures. The suboccipital will not replace the lumbar method. The dangers of the former should be better known than they are at present.

Puerperal Infection Due to Anaerobic Organisms

In the February issue of *Gynécologie et obstétrique,* a bacteriologic study of 100 cases of puerperal infection is reported from one of the Moscow maternities, by Morosova and his associates.

Weinberg of the Pasteur Institute has called attention to the fact that when an anaerobic infection (B. Welchii) even of slight degree is associated with a B. coli infection, the virulence of the anaerobic organism is greatly increased. The authors believe that this is applicable to puerperal infections. The presence of anaerobic organisms (B. Welchii and the anaerobic streptococcus) is a quite frequent finding in the vaginal secretion during pregnancy. One of the most characteristic but rare symptoms of anaerobic puerperal infection is a sense of crepitation on palpation of the uterus, and another is the accumulation of a nonfetid serous peritoneal exudate. The temperature curve is of the continuous type with moderate remissions unless a mixed infection exists; the temperature curve may then vary. Anaerobic infection may involve only the uterine cavity, which is the more favorable type, or it may involve the wall with evidences of a generalized infection of a very severe character. In 38 per cent of the 100 cases, the organisms found were B. Welchii and the anaerobic streptococcus. In 25 per cent only B. Welchii was found, and in 20 per cent only the anaerobic streptococcus. The most virulent cases were those in which B. Welchii and the anaerobic streptococcus were associated. The aerobic streptococcus was found in the vaginal secretion of all 100 cases. B. Welchii was present in blood cultures in only two cases and the anaerobic streptococcus in one case.

The clinical picture of anaerobic infection is characterized by the early appearance of symptoms of toxemia, by the "triad" symptoms (jaundice, cyanosis, brownish color of urine and blood serum), rapid formation of exudates (peritoneal), at times abscess formation in the uterine wall, and pelvic cellular tissue. Crepitation on palpation of the uterus is seldom found.

The mortality in mixed anaerobic infections is much higher (from 53 to 66 per cent) than in aerobic infections. As the anaerobic infection destroys the oxygen-carrying function of the erythrocytes, with resultant symptoms of asphyxia, blood transfusion is indicated in conjunction with serum therapy.

Professor Terrien Elected Fellow of Academy of Medicine

By an almost unanimous vote, the ophthalmologist Prof. Felix Terrien has just been made a fellow of the Academy of Medicine. This is one of the highest honors that can be bestowed on a physician in France. Professor Terrien has occupied the chair of ophthalmology at the Faculté de médecine, the only medical school in Paris, since 1925. His contributions to the anatomy and diseases of the eye have been most important.

BERLIN

(From Our Regular Correspondent)

July 29, 1935.

Problems of Heredity

Since the last report on the subject of sterilization (THE JOURNAL, June 8, p. 2109), a number of important facts have been published. The official journal *Deutsche Justiz* gives the number of court decisions imposing sterilization in 1934. It appears that in 1934 a total of 84,525 petitions were filed, the two sexes being about equally represented. Of these 84,525 petitions, 64,499 were heard before the eugenics courts, and in 56,244 instances sterilization was ordered, the representation of the two sexes being about the same. It is evident, therefore, that at the close of the year about 25 per cent of the petitions remained undecided. Of the petitions that were heard, in 93.8 per cent sterilization was ordered, and in 6.2 per cent the petition was denied by the court. The 205 eugenics courts and twenty-six eugenics superior courts participated in the rendering of these decisions. In nearly all appealed cases the decision of the court of first instance was confirmed. Of 8,219 appeals taken against a sterilization order, only 377 were upheld. It is significant to note that in 438 instances (11.9 per cent) an appeal was taken against the rejection of sterilization by the eugenics courts before which petitions were heard, with the result that, of the 299 appeals heard by the end of 1934, in 179 the appeal was granted and the decision of the trial court was reversed. With a population of more than 65,000,000, there were 1.30 petitions per thousand inhabitants, or one petition to each 771.2 inhabitants.

The minister of the interior has issued a bulletin in which he calls special attention to the necessity of all persons who participate in the court proceedings or in the execution of the intervention preserving absolute secrecy. With regard to the suitable time for the sterilization of young women, a eugenics court has expressed the view that the intervention, by reason of the operative technic, should not take place before completion of the fourteenth year.

Statistics on libido, or sexual desire, following late castration have now been collected and published. In a series of fifty-eight male cases collected by Dr. Kolle in Frankfort-on-Main, as far as information could be secured, in at least one third libido and potency were preserved, although sometimes weakened. On the other hand, de Quervain and Wolf, reporting on their experiences with Swiss patients at the Berne Surgical Clinic, state that in twenty-nine of their series of thirty-five male and female cases complete success (that is, entire suppression of libido and potency) was achieved. From Denmark, Goll reports complete success in forty out of forty-one cases. In a third of the cases, however, the observations extend over a period of only two years. In any event, a large portion of the castrated criminals guilty of sexual offenses do not become repeaters (possibly 30 to 50 per cent).

The opposition to sterilization is strong and is on the increase; at least the voiced objections are more vehement. The Catholics are opposed to it on religious grounds; others because they regard it as undue interference with personal rights. Many have a dread of the operation. The middle classes consider sterilization as a reflection on the dignity of a family. Of late, the ruling party in Germany has taken a strong stand against these objectors. For example, in an article in the correspondence column of the national-socialist party headed "Life or Death," it is strongly emphasized that the life of the nation takes precedence over dogma and conflicts of conscience. Reference is made to the sharp retaliation that will follow continued opposition to the government's plans. At the close of the article the statement is made that such a spirit of opposition is not justified morally or from any other point of view. Likewise Dr. Gross (M.D.), the head of the party's raciopo-

litical bureau, has expressed himself publicly in a similar manner. "Resistance will not be tolerated," he stated; "tolerance and forbearance do not appear to be properly understood in all quarters." Even the minister of the interior felt called on to issue a bulletin in which he expressed the government's intention to take energetic measures to curb the opposition to the law. He demands of his subordinates that, if further cases arise, they institute legal proceedings against persons who openly oppose the law and thus promote malicious attacks on the government and the national-socialist party. Any attempt on the part of a third party to induce persons who are to be subjected to the intervention to offer resistance to the execution of the order in question and to yield only to direct coercion by the police shall be regarded as unlawful opposition to the law. Rust, federal minister of education, recently expressed his views on the subject of "Hereditary Disease in Relation to Our Schools." He urged that in the selection of pupils worthy of a higher education undue weighting of intellectual factors be avoided. According to this decree, "carriers of a predisposition to a disease," although not subject to sterilization, are not suitable to receive a higher education and hence should not be admitted to institutions of higher learning. This decree has come in for some criticism, which appears justified; for among such children there are certainly some who would prove valuable members of society and promoters of culture, in spite of slight manifestations of disease that are under the ban of the law, whereas these mild manifestations appear to be taken as seriously as the more grave evidences of hereditary disease. Recently hereditary disease was declared an argument in favor of the granting of a divorce, the wife in question being affected with schizophrenia. In another case the registrar in a department for the issuance of marriage licenses refused to issue a license because the prospective bridegroom gave evidence of hereditary weakmindedness. The courts supported him in his decision, to which no objections may be raised.

The questions concerning the limitations of interruption of pregnancy in connection with sterilization have not been fully clear; in fact, instructions have been quite contradictory (THE JOURNAL, July 20, p. 212). The legislators have, however, again intervened and have ordered that in the case of pregnant women concerning whose sterilization a valid court decision has been issued the pregnancy may be interrupted only so long as the child is not viable; that is, before the end of the sixth month of pregnancy. The previously cited fundamental decision of the Hamburg court is therefore not approved. Furthermore, interruption of pregnancy should not be resorted to if such an intervention would entail a serious menace to the life and health of the woman. If there are no contraindications, interruption of pregnancy and sterilization should be carried out simultaneously. For the execution of these measures the ministry has created special "expert centers," which must declare the intervention to be necessary and which are equipped to apply all the precautions that the law requires. Only Aryan physicians may serve as experts. The experts themselves may not aid in carrying out the intervention. The expense will be borne in the given cases by the krankenkassen or by the welfare centers. Every interruption of pregnancy, every miscarriage occurring before completion of the thirty-second week of pregnancy, and every premature birth must within three days be reported in writing to the health officer having jurisdiction; this obligation rests on the physician, the midwife or any other person rendering aid but not on relatives or persons belonging to the same household.

Of late, sterilization of all habitual criminals has been proposed; likewise of all criminals who, on close scrutiny of their family history, give evidence of their criminal tendencies with the first criminal offense. Dr. Gerecke, of the Institute of Criminobiologic Research in a penal institution, made in 164 cases a search for evidence of familial contamination, which furnished valuable bases in only eighty habitual criminals. In this investigation only such offenders were considered as had received jail or prison sentences more than seven times. The family histories of eighty criminals were studied, and in 157 relatives the deficiencies shown in the adjacent tabulation were discovered.

	Alcohol Addicts	Criminals	Weakmindedness, Epilepsy, Mental Disease	Commercial Unchastity	Totals
Father.....	32	20	4	..	56
Mother.....	..	10	6	5	21
Brother.....	3	32	5	..	40
Sister.....	..	8	5	4	17
Grandfather...	5	5	..	..	10
Grandmother..	..	..	..	..	..
Paternal uncle	1	3	1	..	5
Paternal aunt	..	..	..	1	1
Maternal uncle	..	3	1	..	4
Maternal aunt	..	..	3	..	3
Totals.....	41	81	25	10	157

These data are incomplete, especially as regards the grandparents. The actual number of asocial individuals in these eighty families would doubtless be much greater. The same is true of the illegitimate children, whose progenitors are frequently unknown. Nevertheless these data constitute valuable material. In only fourteen of the eighty families were no evidences of degeneration discovered (which does not prove that there was no degeneration). From the standpoint of hereditary biology, it was evident that there were some dominant and some recessive (or sex-bound) hereditary predispositions.

In Frankfort-on-Main the largest German heredobiologic center was dedicated as Universitäts-Institut für Erbbiologie und Rassenhygiene. The institute, which is under the direction of Prof. Freiherr von Verschuer, is located in the municipal Haus der Volksgesundheit, recently erected by the local krankenkasse. Von Verschuer, who was formerly engaged at the Kaiser Wilhelm-Institut für Anthropologie in Berlin-Dahlem, will serve at the same time as ordinarius at the University of Frankfort. The new institute will be devoted to research, instruction purposes and eugenic practice. The practice will be chiefly of a policlinical nature. On four forenoons and one evening lectures will be held, at which, in cooperation with the referring clinics, physicians and bureaus, heredobiologic investigations, consultations and the rendering of expert opinions will be carried on. Eight rooms and a small laboratory (used also for photographic work) are available. A number of young women will aid in the securing of information from various sources and in the preparation of genealogical trees. For more detailed research four single rooms and four double rooms are provided. In addition to the rooms for the scientific workers, there is an auditorium with 250 seats, an assembly room for sixty auditors, and a room for collections and paraphernalia used for demonstration purposes. For medical students regular courses of lectures are provided: in the first clinical semester: Hereditary Biology of Man (three hours a week); the next semester: Race Hygiene (likewise three hours a week); in the last clinical semester: Clinic for Hereditary Diseases (two hours a week). In addition there will be lectures for auditors of all faculties; that is, for other than medical students.

Finally, it should be noted that at these health bureaus government consultation centers for heredoracial research, which may be utilized voluntarily by the people, will be established. These consultation centers are obligatory only for persons who are applying for a marriage loan and for persons who wish to settle in the country or desire to make application for citizenship. These centers will investigate a person's hereditary antecedents, which will include the preparation of a family tree, which must go back to his four grandparents, and will comprise also information obtained from members of his family.

from hospitals, and from other institutions. For every person a record card must be made out for the archives of hereditary biology. A copy is sent to the bureau of health of the examinee's birthplace, and a second copy to the federal bureau of health. Through the use of all available data in the bureau of health, in the juvenile bureaus, in the courts and in other institutions, it will be possible gradually to complete the archives of hereditary biology and to make them an unfailing source of information as affecting families with hereditary defects residing within the limits of the bureau of health. In connection with legal adoption of children, these consultation centers must see to it that only children without hereditary defects are adopted (when the progenitor of the child is known). The consulting physician at these centers must, above all, serve as the protector of the family that is free from hereditary defects. He must therefore promote, as far as possible, marriages between persons with no hereditary defects, and must advise against a person with grave hereditary defects marrying into a family in which hereditary taints are absent. Another duty of these consultation centers is to dissuade parents who are not ill but who already have one child with grave hereditary defects from having further children.

VIENNA

(From Our Regular Correspondent)

Aug. 8, 1935.

Changes in the Medical Curriculum and Examinations

As a step in the long expected reorganization of the universities, a new division of the school year, applicable to all Austrian universities, including the medical faculties, has been announced. The regulations will apply to the coming winter semester. The new plan does away with the abnormally short summer semester, which has been only two and one-half months in length. There will be two semesters of virtually equal length: the winter semester, the lectures beginning October 1 and extending to January 31, and the summer semester, the lectures beginning February 15 and closing June 28. The regular period for matriculations for the winter semester is from September 23 to October 15, and for the summer semester from February 1 to February 21. The Christmas holidays will extend from December 19 to January 7, and the Easter holidays from March 16 to April 20. Examinations and conferring of degrees may take place, if desired, any time during the vacations, and, after the close of the summer semester, on up to July 15, and also from September 20 on, preceding the opening of the winter semester. Continuation of the clinical hospital service during the vacations, and on Sundays and holidays, will be regulated by special provisions. The regulations pertaining to medical examinations, which have been in force since April 14, 1903, have likewise been changed. Beginning with Oct. 1, 1935, the following regulations will be in effect: The three so-called rigorosen (rigorous tests) will be retained. In the first rigorosum the test in general biology has been omitted, so that this examination will consist of tests in physics for medical students (only a theoretical test); chemistry for medical students, anatomy, histology and physiology (these four tests being from both the theoretical and the practical point of view). In the second rigorosum the test in general and experimental pathology has been omitted. The subjects that remain are pathologic anatomy and histology, pharmacology and prescription writing, internal medicine, pediatrics, neurology and psychiatry. Pharmacology and prescription writing are treated only theoretically, the other subjects theoretically and practically. Those students who, on Oct. 1, 1935, have not yet completed their first (or second) rigorosum do not need to be examined in the subjects that have been omitted (biology and pathology) from the rigorosum concerned (nor will a previous failure in these omitted subjects have to be made good). The third rigorosum will cover, as before, surgery, gynecology, obstetrics, ophthalmology, dermatology, syphilis, forensic medicine and hygiene. One precondition, however, is that every candidate must furnish evidence that he has heard the clinical lectures on all the subjects of the second and third rigorosum. These lectures are made "obligatory," whereby it is hoped to attain an even and thorough training in all the principal clinical branches.

The second part of the examinations regulations concerns the rules that obtain in the event that the candidate fails to pass the tests in all subjects. Formerly any single test in the six subjects comprising the first rigorosum might be repeated even more than three times, if the candidate failed in a previous test. Now no more than three further trials in any one subject are permitted, and if the candidate fails in two subjects of the first rigorosum he will be allowed only two more trials. If the candidate fails in four subjects of the first rigorosum, he will be excluded from further study of medicine in Austria. He can never secure the degree of doctor of medicine at an Austrian university, even on the basis of a diploma obtained in a foreign country. Furthermore, any candidate who has not completed the first rigorosum within two years of the time he passed the first test will be excluded from further study in Austria. An exception may be made if the candidate can show that the delay occurred through no fault of his (sickness, war). The main purpose of the more severe rules applied to examinations in medicine is that students who have revealed by their repeated failures in tests that they are not adapted to the study of medicine may take up some other profession without undue loss of time. Degrees will be conferred, at the latest, within six weeks of a candidate's passing his last test. If a candidate does not take his degree within the specified time, he may have to wait a long while before a second opportunity will be afforded him.

Prevention of Posterity with Hereditary Taints

The renewed interest that the German sterilization laws have awakened throughout the world in the hereditary transmission of disease induced Prof. Dr. Julius Bauer to deliver a lecture on "The Prevention of Posterity with Hereditary Taints" before the Akademischer Verein für medicinische Psychologie. The desired goal may be best attained through the sterilization of all persons who are likely to generate posterity with hereditary taints, among which the German sterilization law mentions congenital weakmindedness, schizophrenia, circular insanity, epilepsy, hereditary blindness, hereditary deafness, grave alcoholism, and many other conditions. Professor Bauer admitted, however, that the goal sought is attained but imperfectly by the sterilization law, because only those persons with manifest defects and not persons with pathologic hereditary predispositions (who are apparently healthy) are held to trial through the operation of the law. This apparently healthy group perpetuates the hereditary defects. On the other hand, a far-reaching application of the sterilization law to persons with slight disturbances may effect a loss of valuable hereditary qualities in sterilized persons. It is well known that Beethoven's father was gravely addicted to indulgence in alcohol. The parents of many artists and poets were not quite normal mentally; their sterilization would have constituted a great loss to mankind. A much more ethical and less dangerous (though, to be sure, less reliable) method of preventing offspring with hereditary defects is by means of consultations on marriage and possibly prohibition of marriages, particularly with reference to persons with so-called recessive predispositions. Especially marriages of relatives in families with recessive hereditary taints should be absolutely prohibited. Through publicity campaigns, a knowledge of the laws of heredity and the resulting responsibilities resting on citizens should become more widespread.

Marriages

JOHN MONTGOMERY ANDREW, Lexington, N. C., to Miss Mabel Winnifred Wain of Granite Quarry, August 25.

PAUL MULFORD MECRAY JR., Moorestown, N. J., to Miss Justine Godchaux Eiseman of St. Louis, July 6.

WILLIAM LEMUEL GRIGGS JR., Saint Charles, Va., to Miss Dorothy Fugate of Clinchport, September 7.

THOMAS FINCHER MCDANIEL to Miss Josephine Richardson, both of Atlanta, Ga., June 15.

GEORGE BOWERS MANSDORFER to Miss Louise Warfield Hook, both of Baltimore, August 28.

ASHELEY CURTIS NORFLEET to Miss Dorothy Edwards, both of Tarboro, N. C., June 22.

LAURISTON L. KEOWN, Baltimore, to Miss Gladys May Dykes of Eden, Md., August. 30.

LEONARD J. MONSON, Hendricks, Minn., to Miss Eunice Johnson of St. Paul, July 27.

BRUCE N. WOLFF, Gettysburg, Pa., to Miss Dorothy Seiple of Harrisburg, June 8.

CARLO S. SCUDERI to Miss Alice Kathryn Regan, both of Chicago, July 31.

ROBERT E. ROCK to Miss Beryl Canfield, both of Minneapolis, June 18.

Deaths

Francis Wenger Heagey ⊕ Omaha; Columbia University College of Physicians and Surgeons, New York, 1912; associate professor of medicine, Creighton University School of Medicine, and at one time assistant professor of medicine and assistant professor of anatomy; instructor in anatomy at his alma mater, 1915-1916; fellow of the American College of Physicians; president of the Nebraska State Tuberculosis Association; on the staffs of the Creighton Memorial, St. Joseph's Hospital and the Douglas County Hospital; for three years on the staff of St. Luke's Hospital in New York; aged 51; died, August 23, of embolism, one week following an appendectomy.

John Ignatius Fanz ⊕ Philadelphia; Jefferson Medical College of Philadelphia, 1912; professor of pathology, bacteriology and hygiene, Temple University School of Medicine; at various times instructor in anatomy and physiology, and demonstrator in pathology at Jefferson Medical College, and demonstrator in biology at the Daniel Baugh Institute of Anatomy and Biology of the college; on the staff of the Philadelphia General Hospital; aged 44; died, August 26, of heart disease, at his summer home in Bozman, Md.

Harry Wardwell Carey ⊕ Troy, N. Y.; Johns Hopkins University School of Medicine, Baltimore, 1901; fellow of the American College of Physicians; past president of the Rensselaer County Medical Society; formerly instructor in physical diagnosis and medicine, Albany (N. Y.) Medical College; author of a textbook entitled "Bacteriology for Nurses"; aged 60; on the staffs of the Cohoes (N. Y.) Hospital and the Samaritan Hospital, where he died, August 14, of coronary thrombosis.

Elbert William Rockwood ⊕ Iowa City; State University of Iowa College of Medicine, Iowa City, 1895; professor of chemistry and toxicology at his alma mater, and at different times demonstrator in chemistry, and associate professor; first director of the University Hospital; author of "A Laboratory Manual of Physiological Chemistry" and "Introduction to Chemical Analysis for Medical Students"; aged 75; died, July 17, of heart disease.

Adolph Oscar Loe ⊕ Seattle; University of Minnesota Medical School, Minneapolis, 1897; member of the Pacific Coast Surgical Association and the North Pacific Surgical Association; fellow of the American College of Surgeons; past president of the King County Medical Society; member of the state board of medical examiners; on the staff of the Seattle General Hospital; aged 63; died suddenly, July 31, of coronary occlusion.

Charles Naumann McCloud ⊕ St. Paul; University of Minnesota Medical School, Minneapolis, 1901; medical director and vice president of the Minnesota Mutual Life Insurance Company; past president of the Ramsey County Medical Society and the Minnesota Academy of Medicine; aged 63; for many years on the staffs of St. Luke's Hospital and the Miller Hospital, where he died, August 13, of tularemia.

Thomas Wilbur Bath ⊕ Reno, Nev.; St. Louis College of Physicians and Surgeons, 1892; secretary of the Washoe County Medical Society; veteran of the Spanish-American and World wars; formerly county health officer; fellow of the American College of Surgeons; aged 70; on the staffs of the Washoe County Hospital and St. Mary's Hospital, where he died, August 11, of acute myocarditis.

James Comer Johnston, McAlester, Okla.; Fort Worth School of Medicine, Medical Department of Fort Worth University, 1908; member of the Oklahoma State Medical Association; past president and secretary of the Pittsburg County Medical Society; aged 57; on the staffs of St. Mary's Infirmary and the Albert Pike Hospital, where he died, July 26, of carcinoma of the colon.

Philemon Emile Hommell, Jersey City, N. J.; Bellevue Hospital Medical College, New York, 1894; member of the Medical Society of New Jersey; one of the founders and dean emeritus of the New Jersey College of Pharmacy, Newark; at various times delegate to the U. S. Pharmacopeial conventions; aged 72; died, August 21, of carcinoma of the rectum.

Alfred Woodhouse, Toms River, N. J.; Hahnemann Medical College and Hospital of Philadelphia, 1904; member of the Medical Society of New Jersey; president and formerly secretary of the Ocean County Medical Society; on the staffs of the Paul Kimball Hospital, Lakewood, and the Point Pleasant (N. J.) Hospital; aged 56; died, July 27.

Lawson Lee Simmons, Greensboro, N. C.; University of Tennessee Medical Department, Nashville, 1893; Vanderbilt University School of Medicine, Nashville, 1899; member of the Medical Society of the State of North Carolina; aged 65; on the staff of the Wesley Long Hospital, where he died, July 22, of cancer of the pancreas.

Osce Pierce Sweatt, Waxahachie, Texas; Hospital College of Medicine, Louisville, Ky., 1891; member of the State Medical Association of Texas; served during the World War; on the staff of the Waxahachie Sanitarium; aged 66; died, July 27, in the Veterans Administration Facility, Muskogee, Okla.

Frederick Taylor Van Eman, Kansas City, Mo.; Kansas City (Mo.) Medical College, 1897; member of the Missouri State Medical Association; past president of the Jackson County Medical Society; served during the World War; aged 64; died, July 21, in the Trinity Lutheran Hospital.

Frank W. Bullen ⊕ Hibbing, Minn.; Rush Medical College, Chicago, 1896; for twelve years member of the school board; coroner for fifteen years; on the staff of the Rood Hospital; aged 65; died, July 21, of cerebral hemorrhage, while playing golf at Swan Lake, Pengilly.

Harry Clay Boyd, Waynesboro, Tenn.; University of Louisville (Ky.) School of Medicine, 1887; member of the Tennessee State Medical Association; past president of the Hardin - Lawrence - Lewis - Perry - Wayne Counties Medical Society; aged 70; died, August 9.

Evan Coleman Brock ⊕ Columbus, Ohio; Starling Medical College, Columbus, 1904; fellow of the American College of Surgeons; aged 54; on the staffs of the White Cross Hospital and the Mount Carmel Hospital, where he died, August 15, of cerebral hemorrhage.

Eugene Yetman Young, Champaign, Ill.; Rush Medical College, Chicago, 1903; member of the Illinois State Medical Society; on the staff of the Burnham City Hospital; aged 55; died, July 22, in the Mercy Hospital, of bilateral tuberculosis of the kidneys.

Robert Bruce Wilson, Newton Grove, N. C.; Kentucky School of Medicine, Louisville, 1889; member of the Medical Society of the State of North Carolina; aged 79; died, July 12, in a hospital at Fayetteville, of chronic nephritis and prostatic obstruction.

Michael Manley Waterhouse ⊕ New York; Bellevue Hospital Medical College, New York, 1898; member of the Medical Society of the State of New York; veteran of the Spanish-American War; aged 65; died, August 21, of carcinoma of the stomach.

Mary Fish Fleckles, Brooklyn; New York Medical College and Hospital for Women, 1894; on the staff of the Prospect Heights Hospital, Cumberland Hospital and the Methodist Home for the Aged; aged 71; died, August 15, of heart disease.

Howard Marshall Batson, Mannington, W. Va.; Medical College of Virginia, Richmond, 1906; served during the World War; aged 60; died, August 10, in the Cook Hospital, Fairmont, of tonsillitis, septic arthritis and mesenteric thrombosis.

Harry Herr Smiley ⊕ Texarkana, Ark.; University of Missouri School of Medicine, Columbia, 1901; fellow of the American College of Surgeons; served during the World War; aged 60; died suddenly, August 20, of coronary thrombosis.

Henry Dreer McCormick, Germantown, N. Y.; College of Physicians and Surgeons, Medical Department of Columbia College, New York, 1890; member of the Medical Society of the State of New York; aged 69; died, August 26.

George L. Rice, McSherrystown, Pa.; Washington University School of Medicine, Baltimore, 1873; formerly county coroner and member of the state legislature; for thirty-six years justice of the peace; aged 85; died, July 15.

George Edgar Newby ⊕ Hertford, N. C.; Jefferson Medical College of Philadelphia, 1900; secretary of the Chowan-Perquimans Counties Medical Society; aged 60; was instantly killed, July 28, in an automobile accident.

Franklin M. Leitch, Moscow, Idaho; Homeopathic Medical College of Missouri, St. Louis, 1889; member of the Idaho State Medical Association; formerly health officer of Moscow; aged 84; died, August 6, of myocarditis.

John Mann ⊕ Old Westbury, N. Y.; University of the City of New York Medical Department, 1884; aged 77; for many years on the staff of the Nassau Hospital, Mineola, where he died, August 19, of heart disease.

Nectar Miriam Kalaijian Fisk, Royal Oak, Mich.; Michigan College of Medicine and Surgery, Detroit, 1896; member of the Michigan State Medical Society; aged 59; died, August 19, of carcinomatosis.

Alexander Wood Brodie, Prince Albert, Sask., Canada; McGill University Faculty of Medicine, Montreal, Que., 1917; served with the Canadian Army during the World War; aged 44; died suddenly, June 13.

James Wilton Thurman, Floyd, Va.; University of Virginia Department of Medicine, Charlottesville, 1883; aged 79; died, July 23, in the University Hospital, Charlottesville, of cerebral hemorrhage.

Milton R. Thrailkill, Caldwell, Kan.; Northwestern Medical College, St. Joseph, Mo., 1885; aged 72; died, August 19, in a hospital at Ardmore, Okla., of injuries received in an automobile accident.

James Henry Oughton ⊕ Dwight, Ill.; College of Physicians and Surgeons of Chicago, School of Medicine of the University of Illinois, 1907; aged 53; was shot and killed by bandits, August 1.

John Gordon Love, Hartman, Ark. (licensed in Arkansas in 1903); member of the Arkansas Medical Society; on the staff of the Johnson County Hospital, Clarksville; aged 56; died, July 14.

Emil Frederick Baur, Chicago; University of Michigan Department of Medicine and Surgery, Ann Arbor, 1892; aged 67; died, August 25, in the Presbyterian Hospital of infarction of the lungs.

William H. Melster, Milwaukee; Northwestern University Medical School, Chicago, 1906; member of the State Medical Society of Wisconsin; aged 51; died, August 20, of lymphosarcoma.

Frank James Shook, Warren, Ill.; Rush Medical College, Chicago, 1900; aged 68; died, August 2, in St. Francis Hospital, Freeport, of cerebral hemorrhage and arteriosclerosis.

John W. Ross, Cohoes, N. Y.; McGill University Faculty of Medicine, Montreal, Que., Canada, 1881; on the staff of the Cohoes Hospital; aged 80; died, July 29, of arteriosclerosis.

Simeon David Bashore, Palmyra, Pa.; Jefferson Medical College of Philadelphia, 1896; served during the World War; aged 63; was found dead, August 22, of angina pectoris.

Charles Amiot, Montreal, Que., Canada; School of Medicine and Surgery of Montreal, 1898; formerly municipal councillor and mayor of Asbestos; aged 61; died, June 13.

Bennett Newton Sewell ⊕ Boyce, La.; Tulane University of Louisiana Medical Department, New Orleans, 1893; aged 65; died, July 21, of coronary thrombosis.

Edwin Thomas Cundiff, Pittsburgh, Kan.; Howard University College of Medicine, Washington, D. C., 1933; aged 28; died, July 27, of a gunshot wound.

Arthur Ormsby Nicholson, New York; Cornell University Medical College, New York, 1911; on the staff of St. Vincent's Hospital; aged 49; died, July 22.

Frederick Lee Sandel, Columbia, S. C.; University of Georgia Medical Department, Augusta, 1888; aged 70; died, August 5, of chronic endocarditis.

Austin L. Cleveland, Dallas City, Ill.; Bennett College of Eclectic Medicine and Surgery, Chicago, 1906; aged 63; died, August 1, in Rockford, of pyemia.

Charles Lee Behrns, Alice, Texas; Tulane University of Louisiana Medical Department, New Orleans, 1903; aged 66; died recently, of paralysis agitans.

Allan Sterling, Fredericton, N. B., Canada; McGill University Faculty of Medicine, Montreal, Que., 1897; aged 62; died, May 26, of angina pectoris.

Rollin Henry Knowles, New York; Starling Medical College, Columbus, 1881; aged 79; died, August 13, of angina pectoris and coronary occlusion.

Sterling Price, Fort Worth, Texas; Hospital College of Medicine, Louisville, Ky., 1893; aged 69; died, July 31, of endocarditis and hypertension.

Earll Webb Smith, Phoenix, N. Y.; Syracuse University College of Medicine, 1885; aged 76; died, July 7, of coronary occlusion and arteriosclerosis.

Noah Rouse ⊕ Carson City, Nev.; George Washington University School of Medicine, Washington, D. C., 1924; aged 36; was drowned, August 3.

Max Myers Fields, Dante, Va.; Medical College of Virginia, Richmond, 1928; aged 30; died, June 17, in the Clinchfield Hospital, of pneumonia.

George Walker Davidson, Cincinnati; Trinity Medical College, Toronto, Ont., Canada, 1892; aged 66; died in July, at Mariposa, Ont., Canada.

Joseph Lauffer Sowash, Irwin, Pa.; Western Pennsylvania Medical College, Pittsburgh, 1897; aged 65; died, July 28, of carcinoma of the lung.

George W. Ressler, Valley View, Pa.; Jefferson Medical College of Philadelphia, 1884; aged 71; died, July 24, in a hospital at Philadelphia.

George Dudley Riggs, Bristol, Va.; Meharry Medical College, Nashville, Tenn., 1926; served during the World War; aged 46; died, July 29.

Dallas Texas Odell, Christopher, Ill.; Keokuk (Iowa) Medical College, College of Physicians and Surgeons, 1901; aged 55; died, July 30.

Jules Fred Constantin, Roberval, Que., Canada; Laval University Faculty of Medicine, Quebec, 1887; aged 69; died, May 28, of angina pectoris.

Edward F. Suhre, Forest, Ind.; Central College of Physicians and Surgeons, 1897; aged 66; died, August 12, of cerebral hemorrhage.

Mary Florence Lemmon, Cadiz, Ohio; Homeopathic Hospital College, Cleveland, 1893; aged 75; died, July 23, of cerebral hemorrhage.

William D. Sydnor, Hamilton, Va. (licensed in Virginia in 1899); aged 59; was found dead in bed, August 8, of cirrhosis of the liver.

Taylor W. Scott, Stafford, Kan.; University of Louisville (Ky.) School of Medicine, 1881; aged 75; died, July 12, of chronic nephritis.

Robert Roy McClenahan, Port Nelson, Ont., Canada; University of Toronto Faculty of Medicine, 1912; aged 44; died, July 19.

Gavin Steel Scott, Ramona, Calif.; University of Glasgow Medical Faculty, Scotland, 1884; aged 74; died, July 27, of pneumonia.

Forrest Snowden King ⊕ Muskogee, Okla.; Western Pennsylvania Medical College, Pittsburgh, 1907; aged 55; died, August 5.

Henry Wolin ⊕ New York; Long Island College Hospital, Brooklyn, 1915; aged 51; died, July 18, in the Mount Sinai Hospital.

John George Tapper, Elgin, Ill.; Rush Medical College, Chicago, 1882; aged 82; died, September 10, of chronic myocarditis.

George W. Crum, Arenzville, Ill.; St. Louis Medical College, 1874; aged 86; died, August 7, of coronary thrombosis.

Douglas Corsan, Fernie, B. C., Canada; McGill University Faculty of Medicine, Montreal, Que., 1885; died, July 13.

Henry J. Trachman, Windsor, Calif.; Baltimore University School of Medicine, 1900; aged 64; died, July 14.

Stillman Marion Benner, Campbell, Calif.; Rush Medical College, Chicago, 1879; aged 81; died, July 26.

William R. Loftin, Grubbs, Ark. (licensed in Arkansas in 1903); aged 70; died, July 7.

Bureau of Investigation

M.S.T. TREATMENT FOR RHEUMATISM

Another Fraud Debarred from the Mails

Mortin Products of Kansas City, Mo., and Denver, Colo., has been selling a neo-cinchophen-amidopyrine nostrum as a cure for rheumatism under the names "M.S.T. Treatment," and also "Mortin's No. 1" and "Mortin's No. 2." On August 31, 1935, the Postmaster General, having been satisfied that the Mortin Products concern was swindling the public through the United States mails, issued a fraud order closing the mails to the outfit.

The memorandum of Mr. W. E. Kelly, Acting Solicitor for the Post Office Department, to the Postmaster General, embodying the finding of facts and recommending the issuance of a fraud order, gives some interesting data on this swindle. According to the memorandum, Mortin's Products was promoted by three men, W. H. Menzel, C. O. Butler and Walter L. Kight, the first two operating from Kansas City, Mo., and the last from Denver. The business was started, however, in Oakland, Calif., and was an attempt to carry on a business that had been conducted from Houston, Texas, under the name of Martin Products. Menzel and Butler had been employed by the Martin Products concern, which sold an alleged cure for rheumatism under the name "M.S.T." ("Martin's Specialized Treatment"). In September, 1934, the promoters of the Houston outfit were cited by the postal authorities to show cause why a fraud order should not be issued against them. At that time the Martin concern filed with the Post Office an affidavit stipulating that the business had been absolutely discontinued and abandoned and would not be resumed, and the Postmaster at Houston was directed to return to the writers all letters addressed to Martin's Products, stamping on the envelopes "Out of Business."

At this point it is worth noting that cases of acute yellow atrophy of the liver, some fatal, due to the use of M.S.T. (which first was a cinchophen-amidopyrine product and later a neocinchophen-amidopyrine preparation) had begun to accumulate.

Menzel and Butler had in the meantime had trouble with their employers, Martin Products, and they adopted the name Mortin Products, copied the literature and advertising of Martin Products and attempted to duplicate the Martin Products preparation. They started business in Oakland, California, but the promoter of Martin Products went to Oakland and secured an injunction restraining Butler, Menzel et al., from operating under the name Mortin Products. Butler and Menzel thereupon removed to Denver and Kansas City and continued the operation of the scheme with advertising matter copied from that formerly employed by Martin Products.

According to Mr. Kelly's memorandum, also, both Kight and Butler had formerly been employed by a Chicago concern that sold a nostrum for rheumatism. Neither Kight, Butler nor Menzel are physicians, pharmacists or chemists — in fact, Kight is said to have been an oil-tank wagon driver and Butler to have been in the shoe business.

From a letter received from the Board of Medical Examiners of the State of California, it appears that W. H. Menzel had also been a field representative for another fake rheumatism remedy, the Nue-Ovo Laboratories of Portland, Ore. (Nue-Ovo was declared misbranded under the National Food and Drugs Act in Notice of Judgment 16390, an abstract of which was published in this department of THE JOURNAL, Aug. 30, 1930.)

The Mortin nostrum was described as a "scientifically compounded medicinal preparation for rheumatism" that was "a new and recent discovery, not like so many so-called cures reputed to have been discovered fifty or one hundred years ago." The Mortin preparations were analyzed for the postal authorities by the chemists of the Food and Drug Administration. "Mortin's Product No. 1" was found to be tablets each weighing about four grains and containing over one grain of neocinchophen and slightly under one grain of amidopyrine to the tablet, the balance of the tablet being made up of milk sugar and chalk. "Mortin's Specialized Preparation No. 2" had essentially the same composition. With this mail-order treatment there was also sent a bottle of "M.I.T." ("Mortin's Intestinal Tonic," an imitation of "Martin's Intestinal Tonic") which the victim was told to use when a laxative was required. Analysis showed the tablets to contain plant extractives, including asafetida and emodin-bearing (laxative) drugs, ginger, red pepper and strychnine.

According to the advertising of the Mortin outfit, the laws of the United States prohibit any one but a licensed physician from diagnosing or prescribing for any ailment. This statement, of course, is, unfortunately, wholly false. The Mortin advertising went on to state further that the concern had "one of the best physicians on the Pacific Coast" serving as a "chief of staff physicians."

In addition, the Mortin quacks sent to each prospective victim a questionnaire containing twenty-nine questions that were to be answered by the sufferer. It is brought out by Mr. Kelly in his memorandum that the questionnaire was not examined by any physician and the representations with respect to the "staff physicians" were a fraudulent pretense employed by the promoters to lend respectability to their scheme. Kight, who operated the Denver branch of this fraud, informed the Post Office inspector that Dr. A. O. McMichael of that city was the company's physician there.

The files of the Bureau of Investigation show that a few years ago McMichael was exploiting a "patent medicine" known as "Dr. McMichael's Allgland With Radium." This preparation was advertised under fraudulent claims and was declared misbranded under the National Food and Drugs Act; it was the subject of a brief article in this department of THE JOURNAL, July 23, 1927. According to the records of the American Medical Association, Americus O. McMichael was born in 1863, claims a diploma from Drake University College of Medicine, 1894, and is licensed in Iowa, Missouri and Colorado. In 1924 McMichael's name was given as the director of another nostrum outfit, the Carnotite Gland Extract Company; in 1920 as president and medical director of the Radioactive Chemical Company of Denver and in 1925 as "Medical Director" of the Allfood Laboratories.

Acting Solicitor Kelly's memorandum to the Postmaster General stated further that when the Post Office inspector questioned C. O. Butler in Kansas City with respect to the representations as to staff physicians he claimed that all questionnaires received at Kansas City were turned over to Dr. McMichael at Denver, although Kight, in charge of the Denver office, had admitted to the inspector that none of the questionnaires were turned over to McMichael.

In their answer to the charge by the postal authorities, Menzel, Butler and Kight stated that they maintained a registered and licensed physician to examine the questionnaires, make laboratory analyses and prescribe diet routine and other therapy wherever indicated, and they submitted an affidavit executed Aug. 15, 1935, by Lewis J. Greenfield, M.D., of Denver, in which Dr. Greenfield averred that he is a "Staff Physician for Mortin's Products Distributors." However, the affidavit made no statement as to *when* Dr. Greenfield was employed, nor did it indicate that he had ever examined any questionnaires or given any advice! The files of the American Medical Association show that Dr. Lewis J. Greenfield was born in 1896, holds a diploma from the "diploma mill" St. Louis College of Physicians and Surgeons, 1925, and a Colorado license issued the same year. Dr. Greenfield is, of course, not a member of the American Medical Association.

Solicitor Kelly states that the evidence indicates that after the Mortin quacks found they were under investigation by the postal authorities, the arrangement with Greenfield was made so as to give them something to present to sustain the advertised claim regarding "staff physicians." The postal authorities reported further that the same tablets were sent to all purchasers, and the same printed instructions with respect to diet, hygiene and exercises were also sent, regardless of the cause of trouble or the condition of the patient. Mr. Kelly summed up his findings as follows:

"The evidence shows that the preparations are merely pain killers and nothing more and that respondents' representations to the contrary are knowingly false and fraudulent. The evi-

dence shows that the preparations will not reach directly to the source of rheumatic infection, cleanse the blood, regulate and tone the stomach, liver, kidneys and bowels; and that it is false to represent that even though a person may not be suffering from rheumatism these preparation are incomparable system-builders, blood purifiers, and restorers of normal bodily functions."

As a result, Mr. Kelly recommended the issuance of a fraud order, which, as already stated, has gone into effect, debarring this swindle from the United States mails.

Correspondence

HYPERGLYCEMIA

To the Editor:—In the article by Dr. Herman O. Mosenthal on "Hyperglycemia: Evaluation in the Treatment of Diabetes," in THE JOURNAL, August 17, the statement is made by him and most of those who discussed the paper that diabetes is a contributing factor in the causation of arteriosclerosis. I believe Dr. Joslin is the most important sponsor for this view. It is rather curious that in the study of arteriosclerosis most observers have overlooked a rather simple observation, which completely disproves any metabolic origin in the causation of arteriosclerosis; namely, the complete independence in the incidence of arteriosclerosis between the general and pulmonary circuits (Moschcowitz, Eli: The Cause of Arteriosclerosis, *Am. J. M. Sc.* **178**:244 [Aug.] 1929). A false perspective is given to the study of human arteriosclerosis when observations are confined, as is conventionally done, to the aorta and its branches. If, however, observations on the aorta and the pulmonary artery are made it will be quickly realized that simultaneous arteriosclerosis in the two circulations is the exception rather than the rule, so that if arteriosclerosis is found in the aorta the lesion is not necessarily present in the pulmonary artery and vice versa. Early anatomic arteriosclerosis is almost universal in individuals in the third decade of life and increases in intensity and distribution as one passes to the senescent years, even when the blood pressure remains normal (decrescent arteriosclerosis), whereas arteriosclerosis in the pulmonary artery is almost exclusively associated with conditions in which an increased pressure in the pulmonary circuit can be predicated; these are, in the order of frequency, mitral stenosis, pulmonary emphysema, extensive pleural adhesions and fibrosis of the lung, patent foramen ovale, and communications between the right and left sides of the heart. Pulmonary arteriosclerosis is therefore entirely independent of age and sex; I have observed it not uncommonly even in infants with congenital heart disease. The relation of intravascular tension in the causation of arteriosclerosis therefore is vital in the study of the problem. If diabetes were the cause of arteriosclerosis, one would expect as great an incidence of arteriosclerosis of the pulmonary artery as of the aorta, because the same blood bathes the two circulations; but even a casual inspection of autopsy material will show that pulmonary arteriosclerosis never occurs in diabetes unless such disease as I have referred to is associated.

Many writers have confused arteriosclerosis with the lipoid imbibition of the aorta witnessed in nurslings on a high fat diet, in advanced diabetes and nephrotic syndromes associated with hypercholesteremia, and in the experimental arteriosclerosis initiated by Anitschkow and his school produced by excessive cholesterol feeding. This is the lesion that Leary in the same issue of THE JOURNAL calls "atherosclerosis." I believe that such a conclusion is not justified, first, because such lesions unless too far advanced are regressive; secondly, because such lesions are not limited to the arterial tree but are distributed as well to the intima of the veins and to the reticulo-endothelial system; thirdly, because the pulmonary artery and the aorta are simultaneously involved, and, fourthly, experimental arteriosclerosis is produced only under conditions entirely unphysiologic. Human arteriosclerosis histologically presents all the earmarks of a reaction compensatory to intravascular tension. It represents an involutionary process. It is generally overlooked that hypertension is not a new insult that has entered the organism but represents an exaggeration of a normal physiologic function; namely, intravascular tension. Therefore, normal intravascular pressure will also cause arteriosclerosis, given a sufficient period. That is why arteriosclerosis is a normal phenomenon in the greater circulation in the senescent years. The reason it is absent in the pulmonary artery except under the conditions I have mentioned is that the normal intravascular pressure in the pulmonary artery is one-sixth that of the aorta.

While the complete independence in the incidence of arteriosclerosis in the pulmonary and aortic arteries furnishes the most obvious argument against the metabolic origin of arteriosclerosis, the absence of arteriosclerosis in most cases of juvenile diabetes is additional evidence.

To my mind all evidence seems to show that arteriosclerosis is the cause of diabetes rather than the reverse. I have tried to show that arteriosclerosis is only a localized form of vascular sclerosis and that pathologically and pathogenically there are lesions of the capillaries, veins and the lining of the heart chambers that are precisely comparable. When diabetes occurs in arteriosclerosis the inference is that the capillaries of the islands of Langerhans are affected. Why in arteriosclerosis the clinical brunt should be on one or the other organ is a problem that awaits a solution.

ELI MOSCHCOWITZ, M.D., New York.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted on request.

ALOPECIA AREATA

To the Editor:—My son, now 12 years 11 months old, has had alopecia areata since he was 5 years old. His height is 5 feet 6½ inches (168 cm.), his weight 130 pounds (59 Kg.). He is in excellent health and has never had any serious illness. Physical examination is entirely negative except for alopecia. The basal metabolic rate is 0. The blood count is normal. At times the alopecia becomes almost complete; then hair begins to fill in but never completely—always one or two patches of alopecia remain. At present the alopecia is extensive. He has made rounds of many dermatologists with but little success. Kindly discuss in Queries and Minor Notes (1) etiology, (2) prognosis, especially what may be expected at puberty, and (3) treatment. Has anterior pituitary any value? If so, what untoward effect on the growth of the skeleton? The patient is very sensitive about his trouble and spends much time worrying about the eventual outcome. Kindly omit my name.

M.D., Colorado.

ANSWER.—1. The etiology of alopecia areata is still obscure after many years of research. The chief theories are (*a*) the trophoneurotic, (*b*) focal infection, (*c*) syphilis, (*d*) heredity, (*e*) contagion and (*f*) the endocrine sympathetic theory.

(*a*) Much evidence favors the influence of nervous instability, trauma affecting the nervous system, or reflex nervous influence on the occurrence of alopecia areata. The experiments of Joseph, Nivelli and others, most recently of Beeson and Pickett (Experimental Alopecia, *Arch. Dermat. & Syph.* **28**: 53 [July] 1933) on cats produced localized patches of alopecia within a month. There has been some argument that these are not patches of genuine alopecia areata; but the fact remains that they do resemble alopecia areata in many respects. The literature is full of references to cases of alopecia areata occurring after physical trauma to the nervous system and shock or nervous disturbances of various kinds.

(*b*) Jacquet's theory that alopecia areata is one of the symptoms of a general condition comparable to the molting of animals is not now considered seriously, but his emphasis on reflexes from the teeth, eyes and so on is still to be considered in some cases of the disease. Chipman's theory of focal infection as a cause of alopecia areata has not received much support, but it also should be kept in mind.

(*c*) Syphilis is considered by the French authorities as one of the most significant factors in the etiology of alopecia areata. Outside of France this relation is not stressed. Undoubtedly in rare cases, syphilitic alopecia resembles alopecia areata to some extent. If syphilis has a relation to real alopecia areata it is probably an indirect one, an influence on general resistance or perhaps a more direct influence through the nervous system.

(*d*) The evidence in favor of heredity in alopecia areata is considerable. It has in many instances occurred in several members of a family. This may be explained as due to similar endocrine disturbances or anomalies in the family or due to contagion.

(*e*) The latter has always been stressed in the etiology of this peculiar disease. Epidemics have been reported in England, Germany, France and Italy. While some of them have been successfully explained away as alopecia due to impetigo or to neurotic rubbing, it seems that some of the epidemics have been composed of genuine cases of alopecia areata. If alopecia areata is a distinct disease due to a single cause, and its symptomatology and course favor this opinion, the contagion must be a weak one able to gain a foothold only in a few persons of low resistance, or as that of herpes simplex—able only now and then to become strong enough to manifest itself. Its trait of recurring sometimes at regular intervals, in other cases erratically, strengthens the analogy.

(*f*) The rôle of endocrine disturbance in the etiology of alopecia areata is based chiefly on the occurrence of the disease with vitiligo, scleroderma, acromegaly, exophthalmic goiter, ovarian dysfunction, adiposogenital dystrophy and other symptom complexes considered of endocrine origin. The microscopic observation that the primary change in alopecia areata is disturbance of pigment lends support to the relation with vitiligo.

Recently Hocker has reported a case of alopecia areata in a girl with irregular menses, with long limbs and large hands and feet, who evidenced, in his opinion, lack of ovarian secretion and an overabundance of the anterior pituitary hormone. She improved both in menstrual regularity and in hair growth on the administration by mouth and subcutaneously of estrogenic substances; but recurrences appeared and after three years' treatment she was suffering another recurrence in spite of energetic treatment (Hocker, H.: Hormonbehandlung einer kreisförmigen später vollkammen Haarlosigkeit [Alopecia Areata] des Kopfes, *Med. Klin.* **30**:603, 1934). Others report similar temporary benefit. No evidence of relation to the pituitary gland has been obtained. There is a form of alopecia seen in some cases of pituitary deficiency, but it does not resemble alopecia areata.

2. The prognosis of alopecia areata is good in most cases. Even when the alopecia becomes generalized, the chances of recovery are fair if there is a growth within two years of the onset. After two years without growth of hair the prognosis is not favorable. However, recovery has been known to occur after twenty and thirty-five years of alopecia. The prognosis is best in children, "in whom the disease ceases with development" (Galewsky, in Handbuch für Haut- und Geschlechtskrankheiten, Berlin, Julius Springer **13**:290, 1929). This is the only reference found to the chance of improvement at puberty.

3. First, search should be made for focal infection or any disturbance of the teeth, eyes or ears that might be causing reflex irritation. The patient should be studied for indications of nervous disturbance or endocrine dysfunction. There is little evidence in favor of treatment with anterior pituitary. There is no experimental evidence that the anterior pituitary or lack of it has anything to do with alopecia areata. In one case moderate improvement occurred during a long course of such treatment. The sister of this patient took the same treatment without benefit. Both had total alopecia. The brother, after about one year of rest, has a recurrence in his sparse scalp hair. The disease is following a typical course and there is grave doubt whether anterior pituitary was of any benefit. Many patients have taken it for long periods without benefit. No effect on the skeletal development of children at puberty has been noted.

General measures to improve resistance are important. Daily salt baths or cold douches are well thought of. General ultraviolet baths may be found helpful, especially in winter. Medication as indicated by any general deficiency or disease should be supplied.

Locally, daily epilation of the loose hairs in the border of the lesions is recommended, followed by a stimulating antiseptic lotion, as red mercuric iodide 1:5,000 in 50 per cent alcohol. Once a week or oftener, according to the reaction, each spot should be treated with ultraviolet rays or an irritant chemical to the point of sharp irritation, enough to cause exfoliation. Graded strengths of cresol in alcohol, or a mixture of phenol 1 part and lactic acid 4 parts, or of equal parts of chloral hydrate, tincture of iodine and phenol, are among the best chemicals although each dermatologist has his favorite.

If such rough treatment fails, even after long use, the irritants may be stopped and x-rays given, one-eighth skin unit once a week or once in two weeks for three treatments. Irritants should not be reapplied for three weeks after the final dose. Care must be taken to avoid overlapping of exposures, best accomplished by sheet lead or lead rubber protection applied close to the head.

Nothing in this is new and it is probable that the patient under discussion has had all of it at one time or another; but persistence is a virtue in the treatment of alopecia areata, if it is indicated anywhere.

POSSIBLE PSYCHONEUROSIS WITH SUSPECTED HYPERTHYROIDISM

To the Editor:—I have under my care a woman, aged 32, weight 113 pounds (51 Kg.), who complains of a somewhat tight feeling in the right side of the neck, mucous shreds in the feces, flakes in the urine, and a tightening sensation in the bladder after urination. She complains also of soreness when the abdominal aorta is rolled under the palpating fingers, this soreness traveling down the sacrum. She was married at 22 and had her first child seven years ago. Delivery was normal. She always has felt jittery or nervous; there is no evidence of mental or emotional instability. In 1930 the appendix was removed, the uterus suspended to the anterior abdominal wall and the cervix cauterized. The menses have always been normal, of the twenty-eight day type (four days) with moderate bleeding, prior to and after the operation. She was told by several physicians that she had a goiter and that it would have to be removed before her symptoms would improve. The eyes are normal. There is no facial tremor. The eyes follow well. The tongue protrudes in the midline. Physiologic enlargement of the thyroid is present (struma). The chest and heart are normal. The pulse always runs around 110 to 130 when the patient is up and around, 80 while she is asleep, and 100 when she is quiet but not asleep. The blood pressure remains around 186 systolic, 110 diastolic, and comes down to 160/100 on vasodilator drugs. The abdomen is normal except for various elusive tender spots, which are never really constant. Pelvic examination reveals a very dry introitus and vault, with much white cheesy material lining the mucous walls. The cervix is normal, but the uterus is distinctly atrophic and infantile. The patient has had all sorts of hormone therapy, including protracted courses of antuitrin-S with some benefit, theelin and all the others. The rectum is very dry and baggy like, and the rectal folds seem to be abnormally large. The Kahn reaction is negative and laboratory work gives negative results, including the urine. She has taken compound solution of iodine in the past without result. In spite of all therapy she has her ups and downs, worries a great deal about herself, and wonders whether there will ever be any change in her condition. She wakes up at 4 a. m. (hears the passing milk team) and then cannot go back to sleep. Four basal metabolic tests give from plus 4 to plus 14. Do you feel that a subtotal thyroidectomy is indicated? Have you any suggestions as to further treatment? At present she is receiving phenobarbital and sodium nitrite by mouth. According to Crile, the thyroid condition (exophthalmic) can be cleared up by sympathectomy. Would it be logical in this case? The patient is rather anxious to have something done to relieve the condition. Your analysis and suggestions will be appreciated. Please omit name.

M.D., Illinois.

ANSWER.—The bizarre, disconnected symptoms of which this patient complains suggest a functional disturbance not associated with organic disease. Patients with such complaints are frequently encountered and are often the source of great anxiety to their physicians. During the course of their management medication of all kinds—drugs, endocrine products, compound solution of iodine, sedatives and such—are tried but uniformly without real benefit. Operations, most frequently operations on the pelvic organs, the ductless glands or the abdominal viscera, may have been done but with no more success.

In the present instance a diagnosis of severe psychoneurosis and moderate hypertension is suggested and is probably correct. These two conditions may be related or may be independent of each other. The hypertension should not be taken too seriously. With time and a fair degree of control of her psychoneurosis, the blood pressure may well drop to a lower level. In the light of our past knowledge of hypertension, little effect may be expected from specific medication directed toward its control and, conversely, much may actually be effected in lowering the patient's blood pressure if and when her psychoneurosis is controlled.

Patients of this type differ greatly and must be treated individually. They have but one feature in common, a functional basis for their disability, the manifestations of which may be as different in two individuals as their personality. Effective management, therefore, requires resourcefulness and individualization on the part of the physician. The sensible family physician can do much in the care of these psychoneurotic patients. He should endeavor to instil confidence and eliminate fear and should encourage the patients to disregard their imaginary disabilities by constant mental training and direction; in most cases such management will result in a material improvement of their condition. Time, perseverance and a sympathetic under-

standing are essential. Certainly the family physician occupies a strategic position in the care of these patients that may overbalance the advantages possessed by the more highly trained psychotherapist in the management of an individual case.

In the present instance it is noted that the patient is underweight and probably is undernourished. She has abdominal complaints and signs suggestive of "mucous colitis" and she is worried about the state of her health. Such accessory conditions are incidental to the underlying functional disturbance. Reassurance as to the absence of organic disease and a sensible, nutritious diet probably would accomplish much in building up her physical condition. Drugs are not advised and may be harmful.

As to the specific questions asked: 1. A subtotal thyroidectomy is not advised and probably would only do harm. 2. Sedative drugs, such as phenobarbital, only tend to aggravate the condition. Healthful, outdoor physical exercise, inducing a natural demand for rest and sleep, probably would accomplish more in the individual case. 3. In the light of our present knowledge, sympathectomy is not indicated and if done in the present instance would only add to the patient's hardship.

CHRONIC COLITIS IN A CHILD

To the Editor:—A boy, aged 7 years, who to general inspection appears to be a normal well nourished child and who has had the usual diseases of childhood but otherwise has had no illness of any consequence, began to have a looseness of the bowels beginning at the age of about 2 weeks. This sometimes borders on a diarrhea for days at a time, with inability at all times to control the movement of the bowel when the desire to stool appears. The blood count and urinalysis give negative results. An examination of the stool does not reveal the presence of any parasites or ova; no occult blood or blood cells are found. There is considerable mucus, and a moderate number of pus cells. Sometimes the stool contains copious quantities of mucus but at no time has the mother found evidence of blood or a dark stool. The stools are usually brown or brownish yellow. The child was nursed by his mother and has since had a normal appetite, and general examination reveals normal health. Rectal examination discloses a sphincter muscle of normal tone, and proctoscopic examination reveals a red and congested mucosa for a distance of about 5 inches up in the bowel, but otherwise no bowel or rectal disorder. I should appreciate a diagnosis and suggestion for treatment. Please omit my name.

M.D., Nebraska.

ANSWER.—There appear to be two factors involved in this case: a looseness of the bowels since the child was 2 weeks of age and an "inability at all times to control the movement of the bowel when the desire to stool appears." These two conditions are perhaps related in this case but not necessarily so. From a description of the case, the stool containing copious quantities of mucus, the boy apparently has a chronic colitis of some sort, somewhat corresponding to the adult condition loosely referred to as mucous colitis. This term is merely a symptom complex of varied etiology. In this particular case, infectious causes of colitis such as amebic and bacillary dysentery should be and apparently have been excluded by proper bacteriologic examination of the stools. Such conditions as ulcerative lesions and polyps have been eliminated by the absence of blood in the stools. Celiac disease is ruled out by the early age of onset, the well nourished appearance and the normal appetite of the child. It might be well, however, to determine the fat content of the stools. The absence of attacks of pain or "colic" tends to exclude a chronic appendicitis, a Meckel's diverticulitis or congenital adhesions about the intestine as reflex causes of the condition. However, a complete gastro-intestinal roentgen study with barium sulphate might possibly reveal something.

At least two possibilities have not as yet been excluded. An allergic reaction of the intestine to certain foods must be seriously considered, especially if there is an allergic family history and other manifestations of allergy in the boy, such as asthma, urticaria, hay fever or transient rhinitis. A diet diary kept by the parents might furnish a clue as to the offending food, or complete skin testing with food allergens might be done.

A congenital neurogenic dysfunction of the colon must be considered, analogous to neuromuscular dysfunctions of the bladder in some children. The two conditions are at times associated. If the child has frequency of urination, anuresis or incontinence of urine, the suspicion would be strengthened. Occasionally incontinence may be associated with a spina bifida occulta. A roentgenogram of the lumbar and sacral spine would be indicated. In such conditions incontinence may be associated with normal tone of the external sphincter, as in this case. Because of the diarrhea, the patient may know when his bowel is going to act but cannot retain control for any length of time. Another possibility is that, although the loose stools have a physical basis, the incontinence may result from a behavior problem; i. e., a continuance or reversion to infantile habits in an attempt on the part of the child to gain something or to keep himself in the limelight.

The therapy consists in finding the etiologic factor or factors and eliminating them if possible: if food allergy, avoiding the offending foods. If the incontinence results partly from a social maladaptation, proper psychotherapy should be instituted similar to that used in an analogous enuresis, efforts being made especially to impress on the boy that he is no longer a baby and could control himself if he really wanted to.

Symptomatic treatment should be directed toward diminishing the hyperperistalsis by feeding a bland diet, puréed foods with no roughage, giving antispasmodics, as atropine, and astringents, bismuth subnitrate and tannates. Occasionally absorbing substances, as kaolin or charcoal, might be of value. Possibly astringent enemas of 1 per cent tannic acid might help.

FEVER OF UNKNOWN ORIGIN

To the Editor:—I would appreciate suggestions as to further diagnostic and therapeutic measures that I may take regarding a white woman, aged 21, who has headache and vomiting as the principal symptoms, both of unusual duration. The father died of pulmonary tuberculosis; her mother and one half-sister are living and well. The patient had measles, pertussis and pneumonia in childhood, with uneventful recovery. She has always been thin but was rarely ill until two years ago. Menstruation began at 14, scanty and irregular. The present illness began with what was thought to be influenza in April 1933. She improved slowly until May 1933, when she fell and fractured the right ninth rib. The chest was strapped with adhesive plaster. Recovery was satisfactory. In July 1933 she began to have headache and some fever, which rarely was above 100, with slight loss in weight. She was admitted to a hospital, where a diagnosis of atypical typhoid was made. A roentgenogram of the chest showed a healed fracture of the ninth rib. There was no evidence of tuberculosis or other abnormality. After one week in the hospital the patient's temperature became normal and remained so until her discharge four weeks later. One week after admission the patient complained of headache and began vomiting. This continued until her discharge. She continued to vomit, complained of headache, and still had a low grade fever. She was again admitted to the hospital in September 1933 and was given numerous hypodermoclyses of dextrose and saline solution to control the vomiting and dehydration. A gastro-intestinal series after a barium sulphate meal revealed hypermotility of the stomach, cardiospasm and slight six hour retention. No ulcer was seen. The gallbladder after intravenous injection of dye was normal. She stayed in the hospital three months, had headaches and vomiting the whole time, and was then allowed to come home under the care of a physician, who treated her with diet, antiemetics, sedatives and rest in bed until February 1934, when she came under my care. The patient is well developed but emaciated and very dehydrated. The temperature ranged between 98.6 and 103 from March 1934 to March 1935. The head, eyes, ears, nose, throat and neck are normal. There is no thyroid enlargement. The chest is flat, with a rachitic rosary; expansion is good. The lungs are apparently normal. The breasts are small and atrophic. The heart rate is constantly above 100 and is regular in rhythm, with no enlargement, murmur or other abnormalities. The abdomen is sunken; there are no masses or tenderness, but the patient complains of epigastric discomfort. Vaginal examination has not been done. The pupils are equal and react to light and in accommodation. The knee jerks are slightly hyperactive and equal. The Romberg, Babinski, ankle clonus and Kernig signs are all negative. The superficial abdominal reflexes are normal. Skin sensation is apparently normal over the whole body. I tried all the usual drugs to relieve vomiting, then a liquid diet, and then thick foods. After having no success, I inserted a Levine tube into the duodenum. Since then I have had the patient take milk, eggs, cod liver oil and orange juice and other liquids. She continues to vomit but does not vomit food. She has been fed by this method almost exclusively for about ten months. The vomiting has never been of a projectile type. Kindly omit name.

M.D., Tennessee.

ANSWER.—The determination of the causes of fever of unknown origin is one of the really difficult problems of internal medicine. In a series of 173 patients discharged from the Peter Bent Brigham Hospital in whom no diagnosis of the cause of the fever was made at the time over a period of about sixteen years, in seventy-eight a definite diagnosis was never made (Alt, H. L., and Barker, M. H.: Fever of Unknown Origin, THE JOURNAL, May 10, 1934, p. 1457). In the twenty-three in whom eventually a diagnosis was made, some form of tuberculosis was ultimately diagnosed in six, valvular endocarditis in six, and malignant conditions in various parts of the body in several cases. It is interesting to note that, in two patients whose temperature reached 104, syphilis was diagnosed on a therapeutic test in one and malaria in another. Not mentioned in this list are cases of undulant fever, in which agglutination tests are important for diagnosis. These cases may continue for several months or a year or more. More recently some writers have called attention to amebiasis as a possible cause of fever of unknown origin, even in the absence of diarrhea. If repeated stool examinations, including stool cultures, are negative, the Arnold modification of the Craig complement fixation test for amebiasis might be tried. Blood cultures should be frequently repeated and the heart must be repeatedly exam-

ined for endocarditis. Repeated urine examinations are indicated for pyelitis, which might be closed at the time of one of the urinalyses.

Intravenous injections of dye for the determination of some form of renal lesion should be made. Roentgen examination of the long bones in a search for Hodgkin's disease, which involves the periosteum, is indicated. The form of treatment will depend entirely on the ultimate diagnosis. In the meantime, supportive and tonic measures as are being used now should be continued.

ESSENTIAL HYPERTENSION WITH ENCEPHALOPATHY

To the Editor:—I wish to inquire about the pathogenesis of epileptiform seizures in arteriosclerotic patients. I have in mind a woman, aged 48, until recently a school teacher, weighing 174 pounds (79 Kg.). For five years she has presented such signs and symptoms of arteriosclerosis as frequent severe headaches, vertigo, insomnia, irritability, hypertension (averaging around 190 systolic, 100 diastolic), retinal hemorrhages (October 1932) sufficient to cause blindness in the right eye, a high degree of sclerosis of the retinal vessels on ophthalmoscopic examination, and an occasional trace of albumin in the urine. In December 1933 she had an intensely severe headache, followed in a few hours by a severe epileptiform seizure lasting around five minutes. The patient was stuporous for nearly two days following this and cannot recall events that took place from the onset of the headache to about two days after. The spinal fluid was under moderately increased pressure and a lumbar puncture seemed to relieve the headache and aid in the patent's recovery at that time. She remained very weak for several months but gradually recovered her strength. At present she presents on physical examination essentially the same condition that she did two years ago. At times she feels quite well. Was I justified in giving the relatives of this patient a decidedly unfavorable prognosis? In Steven's Practice of Medicine, page 713, it states: "Rarely, arteriosclerotic patients suffer from typical epileptiform seizures or stuporous states, which are apparently not due to complete vascular occlusion by thrombosis or embolism, to heart block and the Adams-Stokes syndrome or to uremia, but to the vascular changes themselves." I am curious to know something more definite about these vascular changes and particularly why they should cause the convulsions at one time and not subsequently, considering the progressive nature of the disease. Please omit name.

M.D., Ohio.

ANSWER.—We prefer to designate this a case of essential hypertension with "hypertensive encephalopathy." The latter syndrome is well described by Oppenheimer and Fishberg (*Arch. Int. Med.* **41**:264 [Feb.] 1928) and more recently by Grinker in his textbook of neurology, page 587. Headache, vertigo, convulsions and retinal hemorrhages are common features. Increase in cerebrospinal fluid pressure is common. Grinker says that the relation between arteriosclerosis and hypertension as to cause and effect is not definitely known, but probably the sclerotic changes are secondary to the hypertension. Whether the hypertension is the result of a central process cannot be stated. The attack in December 1933 was one of the "cerebral vascular crises" common in this condition. As Grinker says, their mechanism is unknown. He suggest that "a small arteriole may go into spasm and relax quickly, but still the time may be long enough to produce quite a reaction in the parenchyma, an edema of the interstitial tissue and hyperemia of the neighboring vessels. The processes, clearing quickly, leave a normal functioning area." Horace Evans (*Lancet* **2**:583 [Sept. 9] 1933), in discussing hypertensive encephalopathy, also emphasizes ischemia and edema as bringing on the cerebral crises. The serious prognosis was justified, but, fortunately, in this particular case perhaps the physician unknown to himself brought about a mental tranquillity favoring subsidence of the cerebral process underlying hypertension.

POLYCYTHEMIA

To the Editor:—A man, aged 23, whose previous health was normal, has been suffering for about six weeks with polycythemia. The hemoglobin is 122 per cent, red blood cells 6,200,000, esosinophils 4 per cent. There are albumin and casts in the urine. No signs of lead have been found. The patient was exposed to ethyl gas (lead) in washing airplane motors from June 1924 to April 1, 1935. Can I consider tetra-ethyl lead as a causative factor? What clinically can I consider as the remote effects of tetra-ethyl lead in ethyl gas on a susceptible individual?

M.D., Ohio.

ANSWER.—While the use for cleaning purposes of ethyl gasoline is not condoned, it is unlikely that a polycythemia can be attributed to tetra-ethyl lead in this cleaning agent. Two other possible causes should be considered as more nearly practical.

The first of these is carbon monoxide. The query does not state that the airplane motors were in operation at the time of washing, but it is believable that any such work might at least at times be carried out under conditions providing exposure to this gas. It is reasonably well established that workers in garages and other places where moderate exposure to carbon monoxide is provided develop a mild polycythemia.

A second possible causative agent is to be found in the gasoline itself. Gasoline (benzine), kerosene, naphtha, Stoddard's solvent and similar substances are capable of inducing a stage of intoxication in which polycythemia is a feature. Ordinarily this condition comes early in the period of exposure. All in all, it is believed that greater significance should be attached to the influence of carbon monoxide if exposure can be shown to have existed.

The method of determining the 122 per cent hemoglobin may be of some importance. Current attitudes toward hemoglobin determination lead to unfavorable criticism of many widely used methods. Instead of expressing observations in percentages, it seems that much more accurate results can be obtained through the determination of actual grams of hemoglobin in a given sample of blood. The Haden-Hausser apparatus is a usable instrument for the determination of hemoglobin on the gram basis. So far as is known, the remote clinical effects of tetra-ethyl lead are not dissimilar to those produced by other forms of lead, with the possible exception that tetra-ethyl lead may exercise a predilection for nervous system tissues. Tetra-ethyl lead differs from inorganic lead compounds with respect to toxic features in that it may enter the body by way of the skin. The extent that inorganic lead compounds enter the body through this portal is negligible. Notwithstanding the small amount of tetra-ethyl lead in a gallon of gasoline, this agent should not be utilized for cleaning purposes or for any other purposes that lead to extensive skin contact.

ROSE FEVER

To the Editor:—A woman about 50 years of age complains of headaches dating from twenty years ago, at about which time she had a criminal abortion with an infection. Five years later she had an appendectomy and oophorsalpingectomy on the right side. She had her tonsils removed five years later, for she complained of "rose fever." Now she comes to me with a history of having "rose fever" every June for twenty years. This year she got her attack in the middle of August. This so-called rose fever followed immediately on her smelling roses. The symptoms are typical of hay fever, with itching of the eyes, lacrimation coryza, a tickling sensation of the throat and difficult breathing at times. Roentgenograms of the sinuses are negative. Physical examination is negative. Pollen tests with ragweed, the grasses, timothy, red top, cottonwood and the common pollens are negative. The patient gives a negative history for food or animal sensitivity. Kindly advise as to probable cause and treatment.

M.D., New York.

ANSWER.—"Rose fever" is a title still used, although scientifically incorrect. The symptoms coming on in May, June and July, consisting of rhinitis and conjunctivitis, frequently complicated by bronchial asthma, have been definitely proved to be due to the inhalation of the pollens of various grasses, especially of June grass, timothy, orchard grass and redtop in the northern part of the United States; in the South, Bermuda and Johnson grass are most important.

The pollen of roses does not cause hay fever, except by close contact, as by inhaling roses or by working in a rose garden or in a florist shop. These statements are known to be facts because: 1. The pollen of grasses is carried by the wind and deposited on slides; the grass pollen is easily recognized under the microscope; the pollen of roses is not found on these slides unless the slides are placed very close to roses. 2. The symptoms of the patients coincide exactly with the time and quantity of grass pollination; they do not vary with rose pollination. 3. Skin tests are usually positive to grass pollen, sometimes to rose pollen also. 4. Inhalation of grass pollen in susceptible individuals is positive any time of the year; this may be true also of rose pollen.

Similarly, goldenrod is still often accused of causing the August-September hay fever, which, as known for many years, is due solely to inhalation of ragweed pollen.

In this patient the diagnosis is doubtful but should be cleared up by retesting as follows: The important pollens in her vicinity (to be found in any of several books on allergy or which may be ascertained on request from any of the several pharmaceutical houses manufacturing pollen extracts) should first be skin tested by the cutaneous method. If negative, the intracutaneous method should be tried, with 1:1,000 dilutions of the pollen; if this likewise is negative a few grains of the raw pollen should be laid against one of the lower eyelids and allowed to remain for five to ten minutes (conjunctival test); a positive reaction is shown by redness, lacrimation, photophobia and itching and, if severe, may be cleared up promptly by a drop or two of 1:1,000 epinephrine instilled into the conjunctival sac. If a positive reaction is obtained, the diagnosis of true hay fever is assured in this case because of the symptoms present. Treatment should be begun about March 1 of next year for grass hay fever if this should be found, and

about June 1 for ragweed hay fever if this is present. If both occur, the grass pollen extract should be injected in one arm, the ragweed in the other.

If the pollen tests are entirely negative the patient should be completely tested, cutaneously and intracutaneously, for non-pollen proteins, especially orris root, foods and animal derivatives. It is possible to have seasonal symptoms from one or more of these and the treatment will depend on the results of testing. Elimination of the causative factor is most important, if possible; if not possible, desensitization should be tried.

INFECTION OF UROGENITAL TRACT

To the Editor:—I would appreciate advice as to further procedure with a case of gonorrheal prostatitis and evident gonorrheal arthritis. A white man, aged 26, first infected in 1919, has had fifteen years of irregular treatment both by himself and by physicians. He came under my care in October 1934, complaining of an intermittent discharge, burning on urination, and pains in the sacro-iliac areas. Examination revealed from 12 to 15 pus cells to a high power field but the urine otherwise was normal. The prostate was boggy and tender. Prostatic secretion was moderate in amount, containing white flakes and hundreds of pus cells seen under the microscope. Wassermann reaction was negative. Gonococcus fixation was positive; a 26 F. sound passed with ease. Treatment has included prostatic massage every five to seven days, sexual hygiene, rest, methenamine, diathermy to the prostate every five days for two months, foreign protein therapy in moderate amount, and Parke-Davis gonococcus filtrate every seven days for the last eleven weeks. Local irrigation was done with 1:5,000 potassium permanganate, twice daily during the periods of discharge, and once daily or not at all when the discharge was absent. At present he complains of continued pain in the sacro-iliac region, especially after exercise or work, and continued burning at the base of the penis. Very little discharge remains, and that is after the use of the filtrate. Examination now reveals a nontender, small prostate. There is very little secretion, which contains occasional flakes or none, and many pus cells under the microscope, often in small clumps. The Kahn reaction is negative. Gonococcus fixation is positive. The second glass of urine shows an occasional white blood cell. Is a negative gonococcus fixation test to be hoped for in this case? I wondered whether malarial or other fever therapy would be of benefit and if so whether it could be obtained for the patient at one of the state hospitals. Any suggestion as to further procedure will be welcome. Kindly omit name.

M.D., Illinois.

ANSWER.—A chronic urethral discharge in a given patient is not indicative of gonorrhea.

The complement fixation test, if done properly, is a valuable diagnostic aid. In this instance one would doubt the accuracy of the test.

Gonococcus filtrate should not be used unless there is more positive evidence of gonococcic infection than is obtained in this case.

Examination of the upper urinary tract should be done by retrograde or intravenous urography with urine cultures. Careful examination should be made for focal infection (teeth and tonsils).

Heat therapy induced by malaria should not be considered or, if induced electrically, is of doubtful value.

There has been too much medication and instrumentation used here.

This patient seems to be suffering from infection of the upper urinary tract due to focal infection. Prostatic, urethral and joint involvement is a secondary manifestation of a systemic infection of some kind. In case of negative cultures, one should look carefully for tuberculosis of the urogenital tract.

FOOD POISONING DURING PREGNANCY

To the Editor:—March 12, a husband and wife were stricken with vomiting and diarrhea, apparently due to food poisoning. The woman is seven months pregnant. The husband was rather prostrated for three days but fully recovered. The woman, who was well previously, continued to have mild attacks of nausea and vomiting and felt ill until the 23d, when she had occasional lower abdominal pains, which continued until the 27th, when obvious labor pains began, combined with a sort of tetany of the uterus; the fetal heart became irregular and ceased about four hours after the onset of regular labor. Could this premature labor and fetal death have resulted from food poisoning? No analysis of the suspected food—in this case strawberry pie—was made. Please omit name.

M.D., New York.

ANSWER.—The apparent food poisoning may have had nothing to do with the fetal death and premature labor in this case. Food poisoning accompanied by vomiting and diarrhea are not uncommon during pregnancy, but rarely is there interruption of gestation as the result of it. When food poisoning does lead to fetal death and premature emptying of the uterus, the cause is not definite. It may be due to a combination of factors such as toxins in the maternal blood, sudden and violent increases in intra-abdominal pressure due to persistent and repeated vomiting, and changes in metabolism. An interesting fact is that pregnancy has been interrupted spontaneously in about one third to one half of all reported cases of mechanical intestinal obstruction.

OPACITY IN VITREOUS

To the Editor:—A man, aged 59, is suffering from hyalitis. The patient's history goes back about two months, at which time he had an attack of grip. He was laid up about five days with this illness. His chief complaint is the seeing of one spot floating before his left eye. The only freedom he has from this complaint is when he goes to sleep at night. He describes the spot as that of a half bird, which continually floats before his left eye. He has had cataracts removed from both eyes; the right four years ago, and the left one year ago. Other complaints are a slight weakness, frequent headaches and slight dizziness at times. He suffers from chronic constipation, having always taken something for a bowel movement. On ophthalmoscopic examination, slightly tortuous vessels in the optic disk are seen. No opacities can be determined. The heart sounds are of good force and rhythm. There is a slight systolic murmur at the apex. The pulse is of good volume and tension. The pulse rate is 80 beats a minute and the blood pressure is 140 systolic, 90 diastolic. The abdomen is slightly obese, with the upper portion a trifle larger than the lower portion, suggestive of an enlarged transverse colon. The Wassermann reaction is negative. The hemoglobin is 80 per cent. Red blood cells number 4,430,000; white blood cells, 9,300; polymorphonuclears, 70 per cent; large lymphocytes, 14 per cent; small lymphocytes, 13 per cent; myelocytes, 2 per cent; basophils, 1 per cent. Urinalysis, on both a single sample and a twenty-four hour specimen is negative. Chemical examination of the blood reveals sugar, 129.0 mg.; urea nitrogen, 15.0 mg.; urea, 32.1 mg. I have been treating the patient with saturated solution of potassium iodide and injections of solution of pituitary. The latter afford marked relief from headache. Any information as to the probable cause of the condition and an outline of treatment will be appreciated. Kindly omit name.

M.D., New York.

ANSWER.—The patient undoubtedly has a formed opacity in the vitreous and, as is so frequently the case in such conditions, has focused his attention on the opacity until it has become an obsession. Such opacities are not infrequently found after cataract extraction, particularly when there is the sclerosis of the retinal vessels, as evidenced by "slightly tortuous vessels in the optic disk." There is no known treatment today that will eliminate isolated vitreous floaters, but they will decrease in size with time and no longer command the all-arresting attention of the possessor.

SEPARATION OF RECTUS ABDOMINIS

To the Editor:—A boy, aged 3 years, a normal child with negative family history, complains of a peculiar pain in the umbilicus, with some loss of appetite. During these attacks he lies on the abdomen for relief. The most recent attack came on simultaneously with a slight cough. The boy is vigorous and healthy and is of normal weight and height. Physical examination reveals considerable separation of the abdominal rectus muscle at the midline from the sternum to the umbilicus. There is no deep tenderness. There seems to be very little support to the abdominal wall in this separation. I have never heard or seen such a condition and would like to know whether or not there is such a malformation and if this could produce the symptoms complained of. Kindly omit name.

M.D., Wisconsin.

ANSWER.—The separation of the rectus abdominis in the midline between the xiphoid process and the umbilicus is not unusual in young children. This separation may be easily detected if the examiner's fingers are placed in the midline of the abdomen with the child lying on his back, and the child is then slowly raised to a sitting position. It has been said that so-called navel colic may be caused by a pinching of the peritoneum when separation of the rectus abdominis is present. Frequently small preperitoneal fatty masses that have penetrated through the linea alba because of a diastasis of the rectus muscles may be felt. It has been believed that these nodules, by drawing on the attached peritoneum, may produce critical attacks of pain, especially after eating. So-called navel colic is often of psychic origin and without organic basis.

SENSITIVITY TO SUNLIGHT

To the Editor:—A white woman, aged 35, well nourished, a brunette, has urticaria when any part of her body is exposed to the sun longer than five minutes. This may come on in an hour or so or it may be twenty-four hours. It is relieved by a soothing lotion and disappears in from twenty-four to thirty-six hours. Although she lives in southern California, she had it while visiting in Oregon this summer.

G. HORACE COSHOW, M.D., Carpinteria, Calif.

ANSWER.—The best treatment for a case of this sort is avoidance of sunlight and the wearing of colored clothing. The patient can be desensitized by carefully graduated increasing doses of sunlight or ultraviolet rays applied to the skin generally. The doses should be so regulated as to avoid causing reaction. The patient should be warned against exposing the eyes to sunlight, since the retina might be damaged thereby.

The subject was discussed by W. W. Duke in an article entitled "Urticaria Caused Specifically by the Action of Physical Agents (Light, Cold, Freezing, Burns, Mechanical Irritation, and Physical and Mental Exertion)" in THE JOURNAL, July 5, 1924, page 3.

DANGER OF TUBERCULOSIS FROM CONTAMINATED WATER

To the Editor:—I am writing you for definite information regarding the effect of the chlorination of water on tubercle bacilli. In a nearby community the effluent from an Imhoff tank at a tuberculosis sanatorium discharges into a small branch a few hundred yards below. This branch in turn passes into a creek, which serves as one of the sources of water for a certain outdoor swimming pond. Below this pond is another pond, on which are located two other bathing resorts. The first pond is about two miles below the outlet of the tank, the second pond about four miles below. The first branches and creeks in the neighborhood of the sanatorium apparently all reach these ponds. For this reason it is not practicable to divert the effluent to another creek. In view of this it has been suggested that a dry-feed chlorination apparatus be set up over a manhole below the tank and thus chlorinate the effluent before it reaches its first destination. To what extent would you consider the health of bathers in these two ponds to be jeopardized as a result of the present set up? Would you consider chlorination of the effluent to be of any value in its effect on the tubercle bacilli? What solution or suggestions can you offer in regard to correction? Please omit name and address.

M.D., South Carolina.

ANSWER.—Although there seems to be no direct evidence that tuberculosis is contracted by bathing in contaminated water, the possibility cannot be altogether ignored. As is well known, the wide dissemination of tubercle bacilli makes the exact source of a tuberculous infection peculiarly difficult to trace. The situation described must be regarded as undesirable. On the other hand, considerable destruction of tubercle bacilli may take place in the Imhoff tank, other germicidal influences are at work in the flowing stream, and there would seem to be high dilution. The danger to bathers from tuberculosis would seem to be slight. Chlorination of the effluent from the Imhoff tank is advisable, not only to meet possible criticism but to insure that the effluent is free from intestinal pathogens, which may constitute a more serious menace than tubercle bacilli. It might be wise, under the conditions described, to use special care within the sanatorium in the cremation of sputum cups.

CHRONIC CONJUNCTIVITIS

To the Editor:—A woman, aged 23, complained of pain in the left eye, with photophobia, and a feeling as of "sticks" in the eye. The attack was ushered in by, and recognized by, the seeing of halos around lights at night. She began to have these attacks in 1932, when they were treated as iritis. They have recurred, coming more frequently, so that she has had two during the past week. She is highly sensitive to many things and has been on a diet the past year, with little apparent effect, since she has had more attacks during the past three months than she had before. The physician who had seen her last was treating her for allergic glaucoma and advocated intravenous sterile peptone, 1 cc., for the attacks. I gave her the peptone and she seemed to get relief. I have never heard of allergic glaucoma before. There is no marked difference in tension that I can determine, and the disk seems normal immediately after the attack wears away. Can you help me make a diagnosis or explain the action of the peptone? Please omit name.

M.D., Massachusetts.

ANSWER.—"Allergic glaucoma" falls into much the same category as the Purple Cow. The described condition sounds very much like a chronic conjunctivitis with subacute exacerbations. The secretion that could result from this might account for the halos. Neither glaucoma nor iritis would occur in attacks twice a week with spontaneous disappearance. The peptone acts merely as a foreign protein, which naturally would be beneficial to the inflammatory process, whatever it was.

IMPETIGO OR PEMPHIGUS?

To the Editor:—Please advise treatment for a woman who, following erysipelas of the face and scalp, developed patches up to an inch in diameter of dermatitis, which is thick, brownish, greasy and resembles seborrheic dermatitis to me. These patches are scattered over the entire face and scalp and when removed leave raw areas. Ointment of rose water, hydrous wool fat, sulphur ointment and ointment of ammoniated mercury have given no relief. Please omit name and address.

M.D., Texas.

ANSWER.—From so meager a description it is difficult to formulate theories about a possible diagnosis. If impetigo, there should be the initial vesicle visible at times, at least, and some benefit should have been derived from the use of ointment of ammoniated mercury. Nothing is said of temporarily bald areas in the scalp on healing of the excoriations, such as impetigo sometimes leaves.

If impetigo seems to be the probable diagnosis, and the rule of prevalence favors it, an adhesive plaster dressing over each lesion will prevent spread and eventually result in cure. Some antiseptic lotion, such as 1:5,000 mercuric iodide solution, should be applied between the dressings once a day. The probable diagnosis is impetigo, spread by the fingers. This is sometimes not benefited by ointment of ammoniated mercury.

Nothing is said of symmetry of the lesions on the face. The Senear-Usher type of pemphigus produces thick greasy crusts, but there should be involvement of the cheeks resembling lupus erythematosus, and there should be bullae on the body or in the mouth.

DIAGNOSIS OF SYPHILIS

To the Editor:—A white woman came into my office complaining of sore mouth which looked very much like a Vincent's infection superimposed on pyorrhea. No smear was made from the mouth, because of recent antisepsis. There was no other evidence of syphilis, but blood was taken for examination. This blood showed the Wassermann test slight fixation, 1 plus, and with the Kahn precipitation test 2 plus. The patient was given neoarsphenamine, 0.3 Gm., and asked to return in one week. At this time blood was taken from her and from her husband and both gave negative reactions. No other treatment was given than treatment by her dentist. I took blood for examination again today. Should this blood come back positive, I feel that I should continue treatment; should it come back negative, however, should I consider that this is sufficient evidence to discontinue all treatment, except local treatment for pyorrhea, provided follow-up blood examinations are made?

M.D., Virginia.

ANSWER.—The diagnosis of syphilis in this case was based on insufficient evidence. There are many oral lesions that simulate syphilis. The diagnosis of a Vincent's infection can be easily corroborated by a smear. Unless further positive serologic or clinical evidence is obtained, additional antisyphilitic therapy is not justified.

TREATMENT OF VITILIGO

To the Editor:—Please give me information concerning responsive treatment for abnormal pigmentation of the skin. I have a patient who has the characteristic milk white patches on the hands and arms. Apparently it is a disturbance of the normal pigmentation of the skin and, I believe, not an uncommon condition. It seems that he has been told that there is a treatment being used now that helps greatly to remove the ugly blemishes. If you cannot go into the details of the treatment, if any, I would be glad of any references.

CHARLES G. PRATHER, M.D., Westwood, N. J.

ANSWER.—The use of gold sodium thiosulphate intravenously in the treatment of vitiligo was advocated by H. C. L. Lindsay (The Treatment of Leukoderma with Gold Sodium Thiosulphate, *Arch. Dermat. & Syph.* **20**:22 [July] 1929). He was successful in three cases. In other hands it has not been so successful. The patient's health should be built up in every way possible. In winter, ultraviolet treatments should be given; in summer, sun exposure carefully graduated. After many such exposures the pigment will begin to return in most cases and continued treatment will bring about great improvement. The treatment is tedious but not disagreeable and is probably of general as well as local benefit. Active pulmonary tuberculosis may be a contraindication, as are pellagra and a very blond freckling skin.

SWIMMING AFTER EATING—RAW APPLE DIET IN DYSENTERY

To the Editor:—1. There is a widespread belief among the laity that taking a bath or going for a dip in the lake after a meal is harmful. Obviously the strenuous exercise involved in swimming is not desirable immediately after a meal but I wonder if there is any real evidence that mere wading into the water or bathing is undesirable. 2. What are the various methods of preparing the raw apple diet for children with diarrhea?

M.D., New York.

ANSWER.—1. Mere wading in water or taking a bath after a meal is not likely to be harmful to a person with a good digestive and circulatory system. When, however, either digestion or circulation is enfeebled, the changes in the distribution of blood produced by a cold plunge may interfere with the function of the enfeebled organ.

2. Moro (1929, 1931), who established the raw apple diet as a means of treating diarrhea, used thoroughly ripe, peeled and cored apples and converted them into a reddish brown pulp by rubbing them on a grater. From one to four tablespoonfuls or more of this pulp was given every hour or two, the average quantity administered in the twenty-four hours being thirty tablespoonfuls. For forty-eight hours no other food or medicine was given; excepting that a little water or weak tea was allowed if the patient was thirsty. If the patient was dehydrated, physiologic solution of sodium chloride with or without

dextrose was administered. Banana pulp may be added to the apple, if the latter is refused. It makes the apple pulp more palatable. After the third day a transitional diet is used by adding toast, cereal and potato gruel, scraped meat and cocoa.

MENINGITIS IN INFANT AFTER PNEUMONIA

To the Editor:—A baby, aged 1 month, contracted pneumonia during an epidemic. It made a good recovery from the pneumonia but about forty-eight hours before it died spasms began, and, according to the nurse, fifty-one occurred. Just before death the head rapidly dilated until it was approximately twice its normal size. I cannot account for the dilatation of the head. Omit name, please.

M.D., Kansas.

ANSWER.—Meningitis probably developed after the pneumonia. It is impossible to know the extent of the meningeal inflammation, though it is most likely that the inflammatory process occurred, in part at least, at the base of the brain, interfering with the passage of the cerebrospinal fluid to its absorptive surfaces. In consequence of the obstruction to the flow of fluid produced by the acute meningitis, a hydrocephalus occurred, which would explain the rapid dilatation of the head.

The frequent convulsions were undoubtedly due to the irritation caused by the meningeal and brain inflammation, both of which occur during the course of meningitis.

AIR AND BONE CONDUCTION IN HEARING

To the Editor:—When testing hearing with a 2 A audiometer with a rubber diaphragm over the ear piece is this testing bone or air conduction?

NORTON H. GOOD, M.D., Buffalo.

ANSWER.—In testing the hearing with the audiometer with the earpiece placed in contact with the auricle, the perception one gets is partly the result of air conduction and partly the result of bone conduction. With the rubber diaphragm placed over the earpiece the element of air conduction will be less than in using the earpiece without a rubber diaphragm, but the perception is still due partly to air conduction and partly to bone conduction.

ANTITYPHOID VACCINATION

To the Editor:—I have been accustomed to using typhoid vaccine in the usual three dose series of injections, repeating the whole series of three injections when a period of time had elapsed or conditions arose that seemed to indicate revaccination. I have heard of the practice of a physician in this community of giving one injection of typhoid vaccine every spring to children previously given the usual three injections. Is this practice any better than repeating all three injections after a lapse of two or three years? Is this practice widely followed? I have under my care a large group of children whom I have immunized against typhoid with the usual three injections. None is going to rural or typhoid communities. How should immunity in these children be maintained?

M.D., Georgia.

ANSWER.—So far as known, the practice of giving one injection of typhoid vaccine every spring is not followed widely at all. The protective effect of such injections has not been studied carefully and it is not known whether the practice is better than repeating the usual three injections when indicated.

In children who have received the usual three injections, no other way is known of maintaining and reinforcing the immunity than revaccination after a number of years or when conditions arise that definitely require effective protection against typhoid.

AUTOHEMOTHERAPY IN URTICARIA

To the Editor:—Recently a patient of mine, who is suffering from urticaria of unknown or, rather, undiscoverable origin, was advised to have 10 cc. of blood drawn from the median basilic vein and injected into the gluteal muscle, this procedure to be repeated once or twice weekly for from six to ten weeks. Will you please inform me as to the rationality of this procedure? Is it a method of foreign protein shock? Is it preferable to sterile milk or some other form of foreign protein? Kindly omit name.

M.D., West Virginia.

ANSWER.—The use of autohemotherapy in urticaria is an established procedure, among others, and the results obtained are often striking. In cases of nervous origin, however, this procedure may also fail. It is believed by some workers that autohemotherapy is antianaphylactic, and other studies have indicated that the procedure lessens the permeability of the blood vessels. Reinjection of the patient's own serum or blood is believed by some writers to bring about a desensibilization. The treatment should be continued for several weeks after the cessation of all symptoms. It is a method of nonspecific therapy that is a very mild form of foreign protein shock and exerts an action in some conditions, such as urticaria, that is preferable to sterile milk or some other form of foreign protein.

CATARACTS AFTER DINITROPHENOL

To the Editor:—Kindly outline to me the course and prognosis of cataracts developing in younger women as a result of treatment with dinitrophenol. Can these cataracts be treated and operated on the same as senile cataracts with the same expectation as to the results? The patient is 39 years old and the cataracts in each eye have developed and matured in less than thirty days. They have the same appearance as ordinary senile cataracts except that the lens is evidently greatly swollen, because, while there is no dangerous tension, at the same time the anterior chamber is practically obliterated and the pupils remain dilated.

M.D., Missouri.

ANSWER.—Ophthalmologists are just beginning to learn about the course of cataracts as a result of dinitrophenol. In the early stages there are opacities under the anterior and posterior capsules. Later the whole lens becomes opaque and swollen. Results in those which have been operated on have been just as good as those operated on for senile cataract. In some cases the opacities were not noticed until after treatment had been stopped but went on to complete maturity afterward.

HEMOLYTIC JAUNDICE

To the Editor:—Is it possible to have hemolytic jaundice without any enlargement of the spleen or any visible jaundice, even during exacerbations? A man who has been anemic for eighteen years has increased fragility of the red cells and an increased icteric index. He has exacerbations during which his red cells drop to a million. The color index is high. No parasites have been found in twenty examinations, including examination for filariasis. The leukocyte count is normal, with a tendency toward eosinophilia, and the platelet count is normal. Does such an atypical picture ever occur in hemolytic jaundice? Please omit name.

M.D., Missouri.

ANSWER.—Hemolytic anemia may occur rarely without splenomegaly and with a slight increase in serum bilirubin. The long history of anemia with crises, which result from the destruction of blood and which are accompanied by severe anemia and increased serum bilirubin, are typical of this disease. There may or may not be a familial history of icterus. The reticulated erythrocytes are increased, as a rule, particularly during the crises, and the fragility of the erythrocytes to hypo-isotonic salt solution is increased. Morphologically the erythrocytes usually are smaller than normal, although many macrocytes (regenerative) are present. Most of the microcytes are well filled with hemoglobin and appear to be spherical. Slight enlargement of the spleen may occasionally be demonstrated by an oblique roentgenogram.

If this case meets the preceding criteria, with the exception of demonstrable splenomegaly, the diagnosis of hemolytic anemia is warranted.

WATERMELON AND WHISKY

To the Editor:—Time and again one hears that it is often fatal to eat watermelon and then take a drink of gin or whisky. Is there any truth in this? Kindly omit name.

M.D., Florida.

ANSWER.—There seems to have been no such accident reported in the literature, and there apparently is no good reason why it should happen.

SIMULTANEOUS IMMUNIZATION AGAINST INFECTIOUS DISEASES

To the Editor:—In Queries and Minor Notes in THE JOURNAL, July 20, page 221, in your discussion on the simultaneous inoculations against smallpox and diphtheria, you say that "if no emergency exists it probably would be best at this time not to immunize against diphtheria and smallpox simultaneously." I wish to bring to your attention the procedure that I have been using in immunization against smallpox and diphtheria. All children presented for immunization are simultaneously immunized against smallpox and diphtheria. The materials used are glycerinated smallpox virus vaccine and alum precipitated toxoid. I have inoculated approximately 1,000 children by this method, varying in age from 4 months to 13 years. Multiple immunizations of this character have been found as effective as separate immunizations and are unaccompanied by any greater reactions than those produced by separate inoculations of the respective materials. By this method of immunization it is possible to protect a greater number of children at one sitting against these two diseases.

In a series of 100 cases in which I have studied the simultaneous multiple immunization against smallpox and diphtheria, I found that the reactions were no greater than in the single immunizing treatment and that the immunity and the rapidity of immunity were not affected.

I have come to the definite conclusion that the simultaneous multiple immunization against smallpox and diphtheria is a practical method applicable as a routine procedure in mass immunization as well as in private practice; that the simultaneous immunization against smallpox and diphtheria is a safe and effective procedure.

CHARLES S. STERN, M.D., West Allis, Wis.
Commissioner of Health.

Medical Examinations and Licensure

COMING EXAMINATIONS

AMERICAN BOARD OF DERMATOLOGY AND SYPHILOLOGY: Kansas City, Mo., May. Sec., Dr. C. Guy Lane, 416 Marlboro St., Boston.

AMERICAN BOARD OF OBSTETRICS AND GYNECOLOGY: Written examination and review of case histories of Group B applicants will be held in various cities of the United States and Canada, Dec. 7. *Applications must be filed not later than Nov. 1.* Sec., Dr. Paul Titus, 1015 Highland Bldg., Pittsburgh (6).

AMERICAN BOARD OF OPHTHALMOLOGY: St. Louis, Nov. 18. Application and case reports must be filed before Oct. 15. Sec., Dr. William H. Wilder, 122 S. Michigan Ave., Chicago.

AMERICAN BOARD OF ORTHOPAEDIC SURGERY: St. Louis, Jan. Sec., Dr. Fremont A. Chandler, 180 N. Michigan Ave., Chicago.

AMERICAN BOARD OF PEDIATRICS: Philadelphia, Oct. 10 and St. Louis, Nov. 20. Sec., Dr. C. A. Aldrich, 723 Elm St., Winnetka, Ill.

AMERICAN BOARD OF RADIOLOGY: Detroit, Dec. 1-2. Sec., Dr. Byrl R. Kirklin, Mayo Clinic, Rochester, Minn.

ARIZONA: Phoenix, Oct. 1-2. Sec., Dr. J. H. Patterson, 826 Security Bldg., Phoenix.

ARKANSAS: *Basic Science.* Little Rock, Nov. 4. Sec., Mr. Louis E. Gebauer, 701 Main St., Little Rock. *Medical (Regular).* Little Rock, Nov. 12. Sec., State Medical Board of the Arkansas Medical Society, Dr. A. S. Buchanan, Prescott. *Medical (Eclectic).* Little Rock, Nov. 12. Sec., Dr. Clarence H. Young, 207½ Main Street, Little Rock.

CALIFORNIA: Sacramento, Oct. 21-24. Sec., Dr. Charles B. Pinkham, 420 State Office Bldg., Sacramento.

COLORADO: Denver, Oct. 1. Sec., Dr. Harvey W. Snyder, 422 State Office Bldg., Denver.

CONNECTICUT: *Basic Science.* New Haven, Oct. 12. *Prerequisite to license examination.* Address, State Board of Healing Arts, 1895 Yale Station, New Haven. *Medical (Regular).* Hartford, Nov. 12-13. *Endorsement.* Hartford, Nov. 26. Sec., Dr. Thomas P. Murdock, 147 W. Main St., Meriden. *Medical (Homeopathic).* Derby, Nov. 12. Sec., Dr. Joseph H. Evans, 1488 Chapel Street, New Haven.

FLORIDA: Tampa, Nov. 11-12. Sec., Dr. William M. Rowlett, Box 786, Tampa.

GEORGIA: Atlanta, Oct. 8-9. Joint-Secretary, State Examining Boards, Mr. R. C. Coleman, 111 State Capitol, Atlanta.

IDAHO: Boise, Oct. 1. Commissioner of Law Enforcement, Hon. Emmitt Pfost, 205 State House, Boise.

ILLINOIS: Chicago, Oct. 22-24. Act. Supt. of Regis., Dept. of Regis. and Edu., Mr. Clinton P. Bliss, Springfield.

IOWA: *Basic Science.* Des Moines, Oct. 8. Sec., Dr. Edward A. Benbrook, Iowa State College, Ames.

MAINE: Portland, Nov. 12-13. Sec., Board of Registration of Medicine, Dr. Adam P. Leighton Jr., 192 State St., Portland.

MASSACHUSETTS: Boston, Nov. 12-14. Sec., Board of Registration in Medicine, Dr. Stephen Rushmore, 413 State House, Boston.

MICHIGAN: Lansing, Oct. 8. Sec., Board of Registration in Medicine, Dr. J. Earl McIntyre, 202-3-4 Hollister Bldg., Lansing.

MINNESOTA: *Basic Science.* Minneapolis, Oct. 1-2. Sec., Dr. J. C. McKinley, 126 Millard Hall, University of Minnesota, Minneapolis. *Medical.* Minneapolis, Oct. 15-17. Sec., Dr. Julian F. Du Bois, 350 St. Peter St., St. Paul.

MONTANA: Helena, Oct. 1. Sec., Dr. S. A. Cooney, 7 W. 6th Ave., Helena.

NEBRASKA: *Basic Science.* Lincoln, Oct. 1-2. Dir., Bureau of Examining Boards, Mrs. Clark Perkins, State House, Lincoln.

NEVADA: Carson City, Nov. 4. Sec., Dr. Edward E. Hamer, Carson City.

NEW JERSEY: Trenton, Oct. 15-16. Sec., Dr. Arthur W. Belting, 28 W. State St., Trenton.

NEW MEXICO: Santa Fe, Oct. 14. Sec., Dr. Le Grand Ward, Sena Plaza, Santa Fe.

OREGON: *Basic Science.* Portland, Nov. 16. Sec., Mr. Charles D. Byrne, University of Oregon, Eugene.

RHODE ISLAND: Providence, Oct. 3-4. Dir., Department of Public Health, Dr. Edward A. McLaughlin, 319 State Office Bldg., Providence.

SOUTH CAROLINA: Columbia, Nov. 12. Sec., Dr. A. Earle Boozer, 505 Saluda Ave., Columbia.

WEST VIRGINIA: Huntington, Oct. 28. State Health Commissioner, Dr. Arthur E. McClue, Charleston.

WYOMING: Cheyenne, Oct. 7. Sec., Dr. G. M. Anderson, Capitol Bldg., Cheyenne.

Alabama June Examination

Dr. J. N. Baker, secretary, Alabama State Board of Medical Examiners, reports the written examination held in Montgomery, June 25-27, 1935. The examination covered 10 subjects and included 100 questions. An average of 75 per cent was required to pass. Twenty-seven candidates were examined, all of whom passed. The following schools were represented:

School	PASSED	Year Grad.	Per Cent
George Washington University School of Medicine		(1934)	82.4
Rush Medical College		(1935)	91,* 92.8*
Louisiana State University Medical Center		(1935)	82.5*
Tulane University of Louisiana School of Medicine	(1935) 84.6, 84.7, 86.9, 87.5, 88.5, 88.5, 89.2, 89.7, 90.1, 90.8, 90.8, 91, 91.5, 92.1, 92.2, 93.8	(1934)	79.8,
Harvard University Medical School		(1935)	90
New York University, University and Bellevue Hospital Medical College		(1934)	79.9
University of Oklahoma School of Medicine		(1933)	84.9
Vanderbilt University School of Medicine	(1935) 84.2, 84.6,		88.6

Nine physicians were licensed by reciprocity and 1 physician was licensed by endorsement from January 5 through June 1. The following schools were represented:

School	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
Rush Medical College		(1930)	Illinois
University of Louisville School of Medicine		(1933)	Kentucky
Louisiana State University Medical Center		(1934, 2)	Louisiana
Tulane University of Louisiana School of Medicine		(1932)	Louisiana
Detroit College of Medicine		(1907)	Michigan
Medical College of the State of South Carolina		(1928)	S. Carolina
University of Tennessee College of Medicine		(1931, 2)	Tennessee

School	LICENSED BY ENDORSEMENT	Year Grad.	Endorsement of
Harvard University Medical School		(1928)	N. B. M. Ex.

* This applicant has completed the medical course and will receive his M.D. degree on completion of internship.

Texas June Examination

Dr. T. J. Crowe, secretary, Texas State Board of Medical Examiners, reports the written examination held in Austin, June 18-20, 1935. The examination covered 12 subjects and included 120 questions. An average of 75 per cent was required to pass. One hundred and seventy-nine candidates were examined, 176 of whom passed and 3 failed. Forty applicants were licensed by reciprocity and 1 applicant was licensed by endorsement. The following schools were represented:

School	PASSED	Year Grad.	Per Cent
Northwestern University Medical School	(1934) 79.6,	(1935)	82*
Tulane University of Louisiana School of Medicine		(1934)	90
Harvard University Medical School	(1933) 89.6,	(1934)	86.1
University of Oregon Medical School		(1934)	86
University of Pennsylvania School of Medicine		(1935)	86, 89.3
Baylor University College of Medicine	(1935) 75, 75, 76.1, 76.3, 76.6, 77, 77.4, 77.4, 77.5, 78, 78, 78, 78.3, 78.4, 78.7, 78.7, 78.8, 78.8, 78.8, 79, 79.6, 79.8, 79.9, 79.9, 80.6, 80.9, 80.9, 81, 81.2, 81.4, 81.5, 81.8, 82, 82, 82, 82.2, 82.5, 82.6, 82.8, 83, 83, 83.4, 83.6, 83.6, 83.8, 83.8, 83.8, 84, 84, 84, 84, 84, 84.3, 84.3, 84.3, 84.7, 84.9, 85, 85, 85, 85, 85.1, 85.7, 85.7, 85.8, 85.8, 86, 86.1, 86.6, 86.6, 87.3, 87.6, 89, 90.8, 91.4		(1935)	84.7,
University of Texas School of Medicine	(1935) 79.2, 79.4, 79.7, 80.1, 80.3, 80.4, 80.7, 81, 81.2, 81.8, 81.9, 82, 82, 82, 82.1, 82.4, 82.5, 83, 83, 83, 83, 83.3, 83.5, 83.6, 84, 84, 84, 84, 84, 84.2, 84.4, 84.7, 84.9, 85, 85, 85.2, 85.3, 85.4, 85.4, 85.5, 85.6, 85.6, 85.8, 86, 86, 86, 86, 86, 86.1, 86.1, 86.2, 86.4, 86.7, 86.8, 86.8, 86.9, 87, 87, 87.1, 87.1, 87.2, 87.3, 87.3, 87.4, 87.4, 87.5, 87.7, 87.7, 87.8, 88.2, 88.3, 88.3, 88.5, 88.7, 88.8, 89.2, 89.4, 89.4, 89.8, 90.1, 91		(1935)	76.9,
Medizinische Fakultät der Universität Wien		(1935)	80,† 80.8†
Regia Università di Napoli Facoltà di Medicina e Chirurgia		(1923)	75‡
Universidad Nacional Facultad de Medicina, México, D. F.		(1933)	85.3†
Osteopaths §	75.2, 79.2, 80.3, 80.3, 83,		89.7

School	FAILED	Year Grad.	Per Cent
Baylor University College of Medicine		(1935)	72, 76.6‡
Osteopath ¶			68.8

School	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
Univ. of Arkansas School of Med.	(1932), (1933), (1934, 3)		Arkansas
University of Georgia Medical Department		(1902)	Georgia
American Medical Missionary College, Chicago		(1906)	New York
College of Physicians and Surgeons of Chicago		(1905)	Indiana
Hahnemann Medical College and Hospital, Chicago		(1907)	Illinois
Northwestern University Medical School		(1926)	Minnesota
Rush Medical College		(1930)	Minnesota
University of Illinois College of Medicine		(1933)	Louisiana
Louisiana State University Medical Center		(1935)	Louisiana
Tulane University of Louisiana School of Medicine	(1925), (1933), (1934) Louisiana, (1934) Tennessee		
Washington Univ. School of Med.	(1932), (1933), (1934)		Missouri
Creighton University School of Medicine		(1933)	Oklahoma
University of Buffalo School of Medicine		(1927)	New York
University of Oklahoma School of Medicine		(1933)	Oklahoma
Jefferson Med. College of Philadelphia	(1913) Iowa, (1918)		Wisconsin
Baylor University College of Medicine		(1934)	Kansas
Meharry Medical College		(1933)	Kansas
University of Tennessee College of Medicine	(1921), (1931)		Tennessee
Vanderbilt Univ. School of Medicine	(1926) Arizona, (1931)		Tennessee
Marquette University School of Medicine		(1932)	Michigan
Schlesische-Friedrich-Wilhelms-Universität Medizinische Fakultät, Breslau		(1927)	Illinois
First Moscow Medical Institute		(1911)†	New York
Osteopaths §	California, Iowa, Missouri, 3, South Dakota		

School	LICENSED BY ENDORSEMENT	Year Grad.	Endorsement of
Tufts College Medical School		(1916)	U. S. Army

* This applicant has received an M.B. degree and will receive an M.D. degree on completion of internship.

† Verification of graduation in process.

‡ Verification of graduation in process. License withheld pending completion of application.

§ Licensed to practice medicine and surgery.

‡ Fell below 60 per cent in one subject.

¶ Examined in medicine and surgery.

Book Notices

The Appraisal of Public Health Activities in Pittsburgh, Pennsylvania, 1930 and 1933. By Marian H. Ewalt, Research Assistant, Bureau of Social Research, Federation of Social Agencies, and Ira V. Hiscock, Professor of Public Health, Yale School of Medicine. Paper. Price, $1. Pp. 125. Pittsburgh: Bureau of Social Research, Federation of Social Agencies of Pittsburgh and Allegheny County, [n. d.].

Standardization of the essentials of public health practice on a quantitative basis has been a ten-year aim of the Committee on Administrative Practice of the American Public Health Association, though the pioneer work in such standardization was done by Chapin in 1915 for the Council on Health and Public Instruction of the American Medical Association, and reported in THE JOURNAL. The Chapin report, in book form, has become a rare and valued piece of public health literature. The work under review is an excellent example of the health appraisal at its best. As its makers have realized from the beginning, the appraisal idea has possibilities of evil as well as of good. It is only a quantitative measure, though some quantitative measures may in themselves be indications of quality; if little or nothing is being done toward a desirable objective, obviously the quality of progress is poor. On the other hand, much activity does not in itself indicate quality; the difficulties encountered in the effort to establish objective measures of quality in public health endeavor have not yet been overcome. All this by way of background for consideration of the report on public health activities in Pittsburgh. This is a measure of the organization of public health agencies in that city, and the quantity of work performed by them, according to the 1934 revision of the Appraisal Form for City Health Work published by the Committee on Administrative Practice. Health activities in Pittsburgh, official and voluntary, are clearly described in sufficient detail to give a comprehensive picture of what the community is doing. Pittsburgh's score on a basis of a maximum 1,000 points is 790, a creditable showing, but one leaving room for growth and development. The significant fact in the report is that it represents the work of a community committee in which the active agencies interested in public health work and social service work in Pittsburgh have cooperated. The Medical Society of Allegheny County endorsed the survey and took an active part in it. There was no minority report.

In this appraisal Pittsburgh can find a chart for planning and directing its health progress for the next five years, with a clear understanding on the part of all concerned as to what has gone before and therefore a minimum liability of misunderstanding or conflict in planning for the future. In this report public health officials, social workers and the medical profession may find an example of community cooperation for better health. More of this kind of cooperation, more such reports, will not only enrich the literature of public health but contribute to progress toward the common objective, the better health of the people.

Recherches expérimentales sur quelques esters de la choline. Par Maurice Villaret, professeur à la Faculté de médecine de Paris, L. Justin-Besançon, médecin des hôpitaux de Paris, et René Cachera, chef de clinique à la Faculté de médecine de Paris. Paper. Price, 38 francs. Pp. 254, with 79 illustrations. Paris: Masson & Cie, 1934.

This monograph is essentially a record of the pharmacologic studies conducted by the authors on various esters of choline derivatives. After a brief outline of the chemistry of the cholines and their general pharmacology, the authors present their own studies in two main parts. In the first part they describe in detail the action of the chlorides or bromides of various esters such as acetyl, formyl, isobutyryl and methylacetyl, and the carbaminoyl esters of choline. Most of the experiments were conducted on dogs, the drug being given by intravenous, subcutaneous or intrajejunal injections. The cardiovascular system and the site of the action of the choline esters thereon were first studied, and next in similar manner the action on the cerebrum and on respiration. From these the authors conclude that death is produced in choline poisoning through its action on the respiration. Ergotamine tartrate was found to intensify the respiratory response. The actions of acetylcholine and methylacetylcholine on smooth muscle were determined by studies on the intestinal, gallbladder, bronchial and iris musculatures. Acetylcholine was found to stimulate salivary and pancreatic secretion by "direct action." Acetylcholine does not alter the effects on blood pressure observed on stimulating the peripheral or central ends of the pneumogastric nerve. From one experiment on a dog, the authors conclude that the intravenous administration of methylacetylcholine produces a fall in alkali reserve, dextrose and water, but a rise in protein content in the blood. The question of the hormone nature of acetylcholine is reviewed briefly. The second part covers the studies on the effects of choline derivatives on man. The importance of the purity of the product and of the solvent used as a vehicle is stressed. Such solvents as diacetyl glycerol, monoacetyl glycol, ethyl lactate and diethylene glycol are recommended, mainly because they prevent the hydrolysis of the acetylcholine ester. The intravenous injection is not recommended. The effects of the intramuscular or subcutaneous injection of methylacetylcholine and acetylcholine esters on vasodilatation in the retina, on peripheral dilatation and on gastric and pancreatic secretions are reported. The authors suggest acetylcholine as a good substitute for histamine in testing achlorhydria. The work is well illustrated by excellent reproductions of kymograph records. It is a good general treatment of a broad survey of the subject.

The Rise of Modern Physics. By Henry Crew. Second edition. Cloth. Price, $4.00. Pp. 434, with 16 illustrations. Baltimore: Williams & Wilkins Company, 1935.

The increasing use of physical therapy has caused the medical profession to appreciate the value of a knowledge of physics. This volume on the history of physics is intended for readers who have had little previous knowledge of the subject but who would be glad to have an informal introduction to the fascinating science of physics. The chapters on the foundation of modern optics, pioneers in electricity and magnetism, the nature of heat, the discrete nature of matter, electromagnetism, the origin of modern electrical units, the inertia of electricity and the rise of modern spectroscopy indicate the interest this volume should have for the medical profession. For instance, the standard unit of measuring the wavelength of radiant energy is the angstrom unit. How this originated as the wavelength of the red cadmium line independent of the metric system enables one to comprehend its significance more than a mere definition does. Archimedes, who was born about 287 B. C., discovered the most fundamental principle of hydrostatics, which is used in underwater exercises.

While the science of physics has aided medicine, many physicians have made worthy contributions to physics. Empedocles (490-430 B. C.), a statesman, physicist and physician, wrote his views in poetry, explaining the cosmos in terms of the elements earth, air, fire and water. Crew says that few ideas in physical science have played a more conspicuous part, and perhaps none for a longer time, than the four elements of Empedocles.

Jerome Cardan (1501-1576), a physician and mathematician, wrote a book that represents the best physical learning of his time. In the early part of the nineteenth century Sir Humphry Davy, who was a practicing physician in Cornwall until Beddoes made him an assistant, received scientific honors for his work in physics from many European countries.

Dr. W. H. Wollaston (1766-1828), a London physician and chemist, well known for his discovery of the elements palladium and rhodium, observed for the first time in 1802 that the spectrum of sunlight is crossed by dark lines. He also succeeded in decomposing water by the sparks of a frictional electric machine.

The author remarks that no serious minded student of physics will fail to make the acquaintance of Dr. Thomas Young, for he is the last man of the race who knew everything that was to be known. His explanation of color vision as modified by Helmholtz is today perhaps the most widely accepted, if not the best, of the various theories on this subject. His contributions to science cover many fields of physics.

In 1855 Dr. David Alter, a practicing physician of Pennsylvania, used the electric spark to map the spectrums of eleven different elements, all metals.

To those interested in physical therapy it is of interest to find that the author gives W. W. Coblentz, a member of the

Council on Physical Therapy, the credit of developing with Melloni and Pfund the use of the thermo-electric current in the measurement of temperature and in the detection of minute quantities of radiation. The delicacy of these modern thermocouples is so great that the radiation from a single candle at a distance of fifty miles can be detected. Crew's book should prove interesting and profitable reading for all physicians and especially to those interested in the use of physical therapy.

The Image and Appearance of the Human Body: Studies in the Constructive Energies of the Psyche. By Paul Schilder, M.D., Ph.D., Research Professor of Psychiatry, New York University. Psyche Monographs, No. 4. Boards. Price, 10/6. Pp. 353, with 7 illustrations. London: Kegan Paul, Trench, Trubner & Co., Ltd., 1935.

For years the author of this monograph has been making observations in neurology and in psychiatry tending toward the development of the hypothesis which he now expresses. Before 1926 he had written a first thesis on the present central theme; namely, that every individual has in his mind a set of ideas or perceptions, which present to him an unconscious scheme of his whole body. While the author admits that there have been partial hypotheses leading up to this idea, he also brings out that there lies a basic concept that reveals to the psychiatrist and the neurologist the reason why some of the more obscure symptoms of nervous and mental disorder take the form that they do. Since the writer is a prominent neurologist with much psychoanalytic training, he is able to present by means of extensive references to the technical literature as well as by means of numerous valid and interesting cases from his own experience the fact that, with certain neurologic diseases, wherein there is destruction of brain tissue, the patient's ideas of his body form and structure are lost. By means of psychoanalysis of functional cases in which changed bodily ideas are symptoms, some explanations for these changes can be educed. As examples of the first type of case the author presents those paralyzed patients who ignore their paralysis and the phenomenon of phantom limbs after amputation, and of the second type the neurotic, particularly the hysterical, who use some other part of the bodies for the erogenous zones. There is also a social concept of the body with varying changes in ideas of nearness and contact with those who enter into the individual's sociopsychoanalytic picture. The monograph is carefully worked out and well systematized, and the style is excellent. One can see that it is not intended as casual reading for physicians in general, even though the ideas are expressed in such a way that lay readers can get a great deal from it. But for the neurologist, the psychiatrist and the psychologist it represents a neat interweaving of neurology and psychiatry which may lead to significant progress in these fields or, if not that, add an intelligent academic standpoint, which has not previously been made readily available concerning certain types of lesions. There are two appendixes, one presenting case histories, the second, illustrated with diagrams, showing the neural structures involved in the body image process.

Midwifery. By Ten Teachers under the direction of Clifford White, M.D., B.S., F.R.C.P. Edited by Sir Comyns Berkeley, J. S. Fairbairn and Clifford White. Fifth edition. Cloth. Price, $6. Pp. 740, with 294 illustrations. Baltimore: William Wood & Company, 1935.

This edition presents evidence of a thorough revision and it includes discussions of practically all the new developments in obstetrics. As with the previous editions, the ten teachers share a common responsibility for the book and there is no way of telling which of the authors wrote any particular chapter. Four separate chapters are headed "The Toxemias of Pregnancy." One contains a general discussion of the subject of toxemias, the second is devoted to preeclampsia and eclampsia, the third takes up hyperemesis gravidarum and acute yellow atrophy of the liver, and the fourth deals with toxemic antepartum hemorrhage. In addition to these four chapters devoted to the toxemias there is a separate chapter on albuminuria. The authors favor the conservative treatment of eclampsia. For most cases of placenta praevia the authors advocate the use of a colpeurynter, Willett's forceps, a vaginal pack or version. They believe that abdominal cesarean section has a limited field in cases of placenta praevia. For the control of postpartum hemorrhage after delivery of the placenta, the authors recommend compression of the uterus between one fist in the vagina and the other hand on the abdomen. They condemn intra-uterine packing, but many prominent obstetricians in this country have found uterine tamponade a valuable and sometimes life-saving procedure in cases of severe postpartum hemorrhage. In the discussion on analgesia, the authors say "The routine administration of powerful narcotic drugs in normal cases to obtain 'painless labor' cannot be defended on medical grounds." This question has recently aroused a great deal of controversy in Great Britain, and the authors express the sentiment of most obstetric authorities of that country. A special chapter is devoted to the use of solution of pituitary in labor. In the discussion on cesarean section, both the classic and the cervical operations are briefly described. However, the author who wrote this chapter presumably has not had personal experience with the cervical operation as it is generally performed. The book is well written and the illustrations are numerous and instructive. It should prove to be popular.

Praktische Anatomie: Ein Lehr- und Hilfsbuch der anatomischen Grundlagen ärztlichen Handelns. Von Dr. T. von Lanz, a. o. Professor für Anatomie an der Universität München, und Dr. W. Wachsmuth, Privatdozent für Chirurgie an der Universität Bonn. Band I, Teil 3: Arm. Cloth. Price, 29 marks. Pp. 276, With 208 illustrations. Berlin: Julius Springer, 1935.

The word "praktische" in the title does not signify that the book is a manual of dissection. It indicates that the gross anatomy of the arm is presented in its functional and clinical significance. It deals with proportions, with movements, with the work and use of the arm and with the risks of injury and disease to which it is especially exposed. Muscle insertions are considered in relation to movements and to their effect on amputation stumps. Left-handedness and its relation to accidents are discussed. The sites and lines of fracture are indicated. The first part deals systematically with the skeletal, arterial, venous and lymphatic systems, concluding after forty-eight pages with the nervous system. The larger part (up to page 246) is regionally arranged, beginning with the shoulder and concluding with the finger tips. Although it is an "applied" anatomy, development, evolution and the biologic significance of structure are treated with more than ordinary appreciation. One of the authors is an anatomically minded clinician, the other a clinically minded anatomist.

The illustrations, for the most part new, are instructive and beautifully reproduced. A valuable feature is the well selected bibliography arranged under headings identical with those of the text.

Recent Advances in Endocrinology. By A. T. Cameron, M.A., D.Sc., F.I.C., Professor of Biochemistry, Faculty of Medicine, University of Manitoba. Second edition. Cloth. Price, $5. Pp. 406, with 55 illustrations. Philadelphia: P. Blakiston's Son & Co., Inc., 1935.

The second edition of this pretentious work appears within a period of little over a year after publication of the first—a tribute to the efforts of author and publisher to keep it abreast of recent developments in endocrinology. The new volume is longer by about forty pages than its predecessor (which was reviewed in THE JOURNAL, May 5, 1934). Actually, however, the new material exceeds the content of the additional pages, as parts of the text of the first edition have been omitted from the second. The author has avoided some of the errors of the first edition (chiefly by deletion) but unfortunately he has added as many or more in the new material. For information on chemistry in many cases he now refers the reader to the book by Harrow and Sherwin, the deficiencies of which have already been pointed out in THE JOURNAL (Aug. 18, 1934).

As material in the present volume has been considered in detail in the previous review, it need not be discussed again. A few more points may be considered here, however. The author states that Allen and Doisy have demonstrated the presence of theelin (estrone) in ovarian follicular fluid. He claims further that "replacement therapy with spayed animals and injection experiments with immature animals have demonstrated conclusively that oestrone is the ovarian principle." Both statements are, of course, in direct contravention of the facts; isolation of theelin from ovarian follicular fluid has never been reported. "Thymophysin," a combination of extracts of thymus and pituitary, is given the benefit of serious discussion, although the Council on Pharmacy and Chemistry several years

ago exposed it as a useless and unscientific preparation. For some reason, the author includes a discussion of the drug ephedrine. If it was his intention to consider the effects of chemical modifications of the epinephrine molecule, it is surprising that descriptions of other related drugs such as synephrin, neosynephrin or benzedrine are not also presented. A section is devoted to the pineal body, yet none of the recent work (especially that by Burger, by Engel and by Saphir) is considered.

As with other recent reviews of endocrinology, this book may be recommended only to those with a sufficient knowledge of the subject to estimate the probable accuracy of the dissertations on the various subjects.

The American Illustrated Medical Dictionary: A Complete Dictionary of the Terms Used in Medicine, Surgery, Dentistry, Pharmacy, Chemistry, Nursing, Veterinary Science, Biology, Medical Biography, etc., with the Pronunciation, Derivation and Definition. By W. A. Newman Dorland, A.M., M.D., F.A.C.S., Lieut.-Colonel, M. R. C., U. S. Army. With the collaboration of E. C. L. Miller, M.D. Seventeenth edition. Fabrikoid. Price, $7; Thumb index, $7.50. Pp. 1,573, with 945 illustrations. Philadelphia & London: W. B. Saunders Company, 1935.

Since the year 1900, this medical dictionary has progressed through seventeen editions; that fact alone signifies the usefulness of the book as well as its popularity. Medical terminology is ever growing and, without constant revision, such as has been done with the American Illustrated Medical Dictionary, it would scarcely be possible to keep in touch with all the new technical terms. The first edition of this dictionary contained only 770 pages, while this edition contains 1,573, an increase of more than 100 per cent. In addition to the ordinary dictionary material there is a large amount of information arranged in tabular form. There are tables of tests, tables of staining methods, tables of methods of treatment, a table of the arteries, a table of the veins, tables of weights and measures, and a table of the doses and actions of numerous drugs. There are numerous illustrations, many of which are in color. The present edition retains the form of the previous edition in that the book is flexible, is thumb indexed, and is of convenient size.

Lethargic Encephalitis. By Isador Abrahamson, M.D., Associate Neurologist, Mount Sinai Hospital, New York City. With a foreword by William J. M. A. Maloney, M.D., LL.D., Consulting Neurologist, City Hospital, New York City. Cloth. Pp. 103. New York, 1935.

This book, sponsored by the Isador Abrahamson Fellowship as a memorial to the deceased author, consists of a foreword of seven pages by Dr. Maloney and six papers on encephalitis by Dr. Abrahamson published between the years 1920 and 1925. In the foreword Dr. Maloney credits Abrahamson with being the first to recognize epidemic (lethargic) encephalitis in America. In the first chapter, entitled "The Epidemic of Lethargic Encephalitis," Abrahamson states that he recognized this case in New York in September 1918. He states that the second case was detected by Major Pothier at Camp Lee in October 1918, the third a few days later at Des Moines by Dr. Ely, and the fourth in Chicago a few weeks later by Dr. Bassoe. The second chapter deals with the mental disturbances, the third with motor disturbances, the fourth with chronicity, the fifth with syndrome changes, and the sixth with changes in muscle tone. A complete list of Dr. Abrahamson's publications is added.

The Child: His Origin, Development and Care. By Florence Brown Sherbon, A.M., M.D., Professor of Child Care and Development, Department of Home Economics, University of Kansas. Paper. Price, $3.50. Pp. 707, with 147 illustrations. New York & London: McGraw-Hill Book Company, Inc., 1934.

The endeavor of the author is to present to the student facts about the child from his earliest origin until he enters school, so that later on the student will be able to study the literature on child development understandingly. There are chapters on biochemistry, heredity and biology, followed by material on reproduction, the glands of internal secretion, pregnancy and childbirth. The second portion of the book deals with the care of the child and the third portion with behavior, development and training. In the book are synthesized the current scientific discoveries in terms of child care and training. The material is presented in such a way that it should be easily understood by the student, and there is adequate bibliographic and reference material. As a textbook for the teaching of child care, development and training, the book should prove quite satisfactory.

Methods of Treatment. By Logan Clendening, M.D., Clinical Professor of Medicine, Medical Department of the University of Kansas. With chapters on special subjects by H. C. Andersson, M.D., and others. Fifth edition. Cloth. Price, $10. Pp. 879, with 102 illustrations. St. Louis: C. V. Mosby Company, 1935.

Like its predecessors, the present edition presents the subject of therapeutics in two parts: first, methods; second, applications. Chapters on the rationale of various types of therapy comprise the first 526 pages of the work, the remaining 333 pages (exclusive of the index) being devoted to the application of these procedures and technics in a selected list of diseases, a plan which the author believes to be the most effective for avoiding unnecessary repetitions. At times these applications are presented in quite terse outline form, while in other instances the discussions are much longer; a notable example of the latter is the fine article on the psychoneuroses, which doubtless comprises one of the author's indulgences in "the luxury of some philosophic comment" of which he speaks in the preface. Among those works which aid the student in understanding the various therapeutic technics and procedures in clinic and ward, this book is preeminent.

Nursing Mental Diseases. By Harriet Bailey, R.N. Third edition. Cloth. Price, $2.50. Pp. 258. New York: Macmillan Company, 1935.

This is the first revision in several years of Miss Bailey's excellent work. In the present edition a brief summary of personality development and alteration has been added for the purpose of emphasizing the importance of understanding mental reactions so that the patient may be nursed more efficiently. Other changes are noted throughout the work. The text is limited to nursing and aspects of psychiatric diseases and disorders that come in the field of nursing practice. Many additions have been made to the nursing procedures with which this textbook is primarily concerned. It is generally acknowledged with regret that mental symptoms, so frequently found in some form and degree in almost any of the disorders of physical function, are almost totally neglected in the usual training course for nurses. While Miss Bailey's book is primarily written for the nurse specializing or intending to specialize in psychiatric nursing, it covers a subject not too technical to be included in the training course of every good school. The thoughtful and understanding nurse, through simple procedures, can often do much to relieve a patient who is depressed, to quiet a restless and excited one, to arouse one who is indifferent, and to manage one who is resistive and quarrelsome. No nurse can read this volume without a much better understanding of the nervous patient. For those specializing in psychiatric nursing it will be found an invaluable aid. The work is most highly recommended.

Sémiologie des affections de la bouche et des dents. Par le Dr. Charles Ruppe. Paper. Price, 32 francs. Pp. 271, with 53 illustrations. Paris: Masson & Cie, 1935.

This covers only the symptomatology of the diseases of the mouth and teeth, including the maxillary sinus, the floor of the mouth, the parotid region and the cervical glands. The illustrations are simple drawings for the most part of a schematic character depicting the relationship of symptoms to anatomic structure. Seventeen tables summarize the contrasting pictures of closely related conditions. This material is valuable for both the clinician and the student with respect to differential diagnosis and a clear understanding of the part played by structure in modifying symptoms.

Manual of Diabetes. By J. J. Conybeare, M.C., M.D., F.R.C.P., Physician to Guy's Hospital. Cloth. Price, $2. Pp. 123, with 5 illustrations. New York and London: Oxford University Press, 1935.

This manual is far above the average of its type and is heartily recommended. It is relatively short, contains essentials, and is well written and in such a manner as not to make the patient apprehensive. It is primarily for patients but will be found useful for physicians. The text is sound and any doctor would find his patient helped by its perusal. The English flavor of its language adds rather than detracts from it for American readers.

Medicolegal

Hospitals, Charitable: Liability for Negligence of Nurse.—The physician-defendant operated on the plaintiff at the defendant hospital. Subsequently it was discovered that a sponge had been left in the patient's body, and she and her husband sued the physician and the hospital. The trial court directed a verdict in favor of both defendants but later granted the plaintiffs a new trial. The defendants appealed to the district court of appeal, third district, California.

The alleged acts of negligence on which the plaintiffs relied to fasten liability on the hospital were that the sponges used in the operation did not have tapes attached to them and that the nurse assisting the physician, who had been furnished by the hospital, failed to count the sponges used. The hospital defended, claiming that it was a charitable institution and that it used due care in the selection of its nurses and hence was exempt from liability. The hospital further contended that it was not responsible for any alleged negligence of the nurses during the operation.

To determine the charitable status of a hospital, said the district court of appeal, it is necessary to consider not only the hospital's articles of incorporation and by-laws but also its method of doing business. The purposes for which the defendant hospital was formed, according to its articles of incorporation, were "to acquire and maintain suitable and permanent convents . . . orphanages, hospitals and other charitable institutions." It treated pay and charity patients. If there was any surplus above operating expenses, it went to the upkeep of the institution and to educate young women to be teachers and nurses. The court accordingly concluded that the hospital was a charitable hospital and as such was not liable for the alleged negligence of its nurse and of the physician. The fact, the court added, that the patient was a pay patient did not alter the rule of law exempting a charitable hospital from liability.

Furthermore, continued the court, even if the hospital were not a charitable institution, it still would not be liable for the acts of the nurse which it furnished to the operating physician. During the preparation and progress of an operation the nurses in the surgery are under the control of the operating physician, and he, and not the hospital, is responsible for their negligence. *Schloendorff* v. *Society of New York Hospital,* 211 N. Y. 125, 105 N. E. 92.

For these reasons, in effect, the district court of appeal ordered that judgment be entered in favor of the hospital but that a new trial be had as to the physician.—*Armstrong v. Wallace (Calif.), 37 P. (2d) 467.*

Workmen's Compensation Act: Malpractice of Physician; Liability of Employer.—Hughes, an employee, was awarded compensation by the workmen's compensation commission of Missouri for the aggravation of preexisting trachoma, through the accidental splashing of mortar into his eye. He signed a release discharging his employer and his employer's insurance carrier from liability under the workmen's compensation act. Later he sued them in a court of law, for aggravation of the original injury by the malpractice of the physicians employed by the insurance carrier. From a judgment by the trial court in favor of Hughes, the employer and the employer's insurance carrier appealed to the Kansas City court of appeals, Missouri. They contended that the proximate cause of Hughes' injury, if any, by the physicians, was the original accident and that that injury was covered by the compensation paid to Hughes under the workmen's compensation act; that jurisdiction over Hughes' present claim was vested in the compensation commission and not in a court of law.

It is the well established principle of common law, said the court, that if the injuries of a person who is injured by the negligence of another are aggravated by the negligence of a physician employed in the exercise of ordinary care either by himself or by the person doing the injury, the negligence of the wrongdoer in causing the original injury is to be regarded as the proximate cause of the damage flowing from the negligent treatment by the physician. Furthermore, continued the court, while the theory of compensation is not recovery based on negligence or wrongful acts of the employer, but recovery based wholly on the fact of employment, yet the overwhelming weight of authority is that in compensation cases the malpractice of a physician selected by the employer to treat the injuries of his employee is directly traceable to and a proximate result of the primary injury for which the injured workman is treated, and, if his injuries are aggravated by the negligence of the physician, compensation for such aggravation must be procured in the proceedings provided for in the workmen's compensation act. Concluding that Hughes' claim had no standing in a court of law, the judgment in his favor was reversed.—*Hughes v. Maryland Casualty Co. (Mo.), 76 S. W. (2d) 1101.*

Compensation of Physician: Liability of County for Fee of Physician Performing Emergency Operation on Pauper.—In an emergency, says the Supreme Court of Nebraska, requiring an operation to save the life of a pauper, the operating physician should, if reasonably possible, attempt to communicate with the proper county authorities charged with the care of the poor, but if the situation demands an immediate operation, the necessary services may be rendered and the law imposes an obligation on the county to pay the reasonable value of such services. In this case, a pauper exhibited the symptoms of a rupture of some kind in the alimentary tract and was hurriedly driven by friends to the nearest hospital, which was out of the county of the pauper's residence. No attempt was made by the hospital to communicate with the authorities charged with the care of the poor in the county in which the pauper resided, to secure authorization for an operation and for hospital service, but the patient was immediately operated on. A ruptured stomach was revealed and necessary hospitalization was rendered. The Supreme Court of Nebraska held the county of the pauper's residence liable for the operating physician's fee and for the value of the hospital services rendered.—*Burnham v. Lincoln County (Neb.), 257 N. W. 491.*

Malpractice: Injury to Spinal Accessory Nerve Incident to Removal of Branchial Cyst.—One of the physician-defendants removed a branchial cyst from the right side of the plaintiff's neck, under local anesthesia. The patient, according to his testimony later, noticed immediately after the operation that the right side of his face was numb and shortly thereafter suffered pains, aches and discomfort in his right arm and shoulder and could not raise his right arm above his head. The wound healed promptly, but an incomplete paralysis and atrophy of the muscles of the right shoulder persisted, with about 25 per cent impairment of function. The patient then sued the operating physician and his copartner for malpractice. From a judgment in favor of the plaintiff, the defendants appealed to the Supreme Court of Oregon.

The plaintiff charged that the operating physician, one of the defendants, negligently injured the right spinal accessory nerve and thus caused his disability. An expert medical witness called by the patient, whom he had treated, testified that in his opinion the spinal accessory nerve had been severed. The defendants and their expert medical witnesses thought that the nerve had not been severed, although it might have been bruised or otherwise injured, but the testimony indicated that, if the nerve had been only bruised, regeneration should already have taken place.

The defendant who had performed the operation and one other expert witness were asked to state their opinions as to certain matters concerning which they had testified. To this the defendants objected, claiming that expert opinions by physicians could properly be elicited only through hypothetical questions. But, said the court, when an expert is requested to express an opinion on facts observed by himself, which he has already related to the jury, the request need not be in the form of a hypothetical question. The jury can determine whether his conclusions are sound.

The defendants contended that there was no evidence to show negligence or to show that negligence, if there was any, was the proximate cause of the plaintiff's condition. But we have here, said the court, the testimony of a competent medical expert that the nerve had been severed; the operating physician's own admission that in removing a cyst such as was removed in this case it would be improper to sever the nerve, unless by "accident," and that no accident occurred in the

course of this operation; and that a severance of the nerve would produce the condition found in the plaintiff after the operation. This, the court held, was substantial evidence competent to support the finding of negligence.

Finally, the defendants contended that a physician is not responsible for an unfavorable result when his method of treatment is one that is recognized as proper by at least a part of the medical profession. This rule, said the court, is not involved in the present case, since the patient did not criticize diagnosis or treatment. He claimed that during the operation the defendant who operated wrongfully severed a nerve, and apparently all medical men, including the operating physician himself, agreed that the severance of that nerve was improper. The jury determined that the nerve had been severed, which was in fact the sole issue in the case, apart from the amount of damages.

The judgment of the trial court in favor of the plaintiff was affirmed.—*Heider v. Barendrick (Ore.), 39 P. (2d) 957.*

Malpractice: Sponge Left in Operation Wound.—The defendants removed the plaintiff's left kidney. In the course of the operation they used small sponges, so-called "fluffs," and larger laparotomy sponges. After her discharge from the hospital, the patient did not recuperate as it was expected that she would, and Dr. Hunsucker, her family physician, was consulted. He found the wound healed, except where an opening had been left for drainage. He enlarged this opening and packed it with iodoform gauze, but the wound continued to give trouble. He called in Dr. Shuford, who, on opening the wound its entire length and probing it, found a sponge similar to the "fluffs" employed in the original operation. He threw this sponge away and repacked the wound, but with gauze dissimilar to that in the sponges used in the original operation. A few days later Dr. Hunsucker removed from deep in the wound another sponge of the "fluff" type. The patient, claiming that the operating physicians had left two sponges in her body, instituted this action for malpractice. From a judgment in her favor, the physician-defendants appealed to the court of appeals of Tennessee, eastern section.

At the trial, the defendants testified that they did not leave sponges in the wound. In this they were corroborated by the anesthetist and by a nurse. As there was only circumstantial evidence to show that they did so, the defendants argued that the suit should be dismissed because of the absence of evidence to support the verdict. The facts of the case, however, said the appellate court, made it incumbent on the defendants to do more than to deny positively that they left gauze within the wound; since it is conceded that it is negligence for a physician to leave gauze within a wound, the defendants must show before they can escape liability that some one else had an opportunity to place the gauze where it was found. The defendants insisted that the evidence did not exclude an inference that Dr. Hunsucker might have packed gauze through the small opening left for drainage, and that the gauze removed by Dr. Shuford was gauze packed in the wound by Dr. Hunsucker. But, said the court of appeals, both Dr. Hunsucker and Dr. Shuford testified that they did not leave sponges in the wound and that the sponges found were not of the same type as the gauze or sponges used by them. Except for a bare possibility that Drs. Hunsucker and Shuford left gauze in the wound, there was no circumstance supporting the inference attempted to be drawn by the defendants, and other proved circumstances negatived this inference and supported the positive and uncontradicted testimony of Drs. Hunsucker and Shuford. The court called attention to a letter written by one of the defendants soon after the first sponge had been removed from the wound, in which he said:

> I am indeed greatly humiliated over the gauze being left in. Would you mind asking the doctor whether it was a gauze pack or a gauze sponge.
>
> . . . These unfortunate occurrences happen in the best hospitals, but of course does not keep one from feeling very badly about such an accident. . . .

It must be conceded, said the court, that either one of the physician-defendants, or Dr. Hunsucker, or Dr. Shuford left the gauze in the wound, and the case presented therefore an issue for the jury to determine from the preponderance of evidence.

The court of appeals affirmed the verdict against the defendants, but only on condition that the plaintiff would consent to a reduction in the judgment from $4,000 to $2,500. Otherwise a new trial was to be granted the defendants.—*Barry v. Maxey (Tenn.), 75 S. W. (2d) 823.*

Evidence: Opinion of Expert Based on Evidence Heard at Trial; Testimony of Expert Invading Province of Jury.—In a will contest in which the mental competence of the testatrix was questioned, the trial court sustained the will and the contestant appealed to the Supreme Court of Michigan. A medical expert who had been present throughout the trial was permitted, over the objection of the contestant and without being interrogated in the form of a hypothetical question, to testify on the basis of all the evidence that he had heard at the trial as to the competence of the testatrix. Such procedure, said the Supreme Court, was error. It permitted the witness to put his own construction on the testimony that he had heard. Without a recital of the facts or assumptions embodied in a hypothetical question as a basis for the expert's answer, it was not possible for the trial court to make an intelligent ruling, or for opposing counsel to interpose timely objection, or for jurors to consider accurately the testimony given. The difficulty of testing the accuracy of the witness's declaration that he has heard and has in mind the testimony of all preceding witnesses condemned the practice, as such accuracy could be tested only by cross-examination, which in the average case would be so lengthy and tedious as to be intolerable. As authority for this holding the court quoted from 11 R. C. L. 581, reading, in part, as follows:

> It may, perhaps, safely be stated as the majority rule, that generally an expert cannot be allowed to base his opinion on the evidence which he has heard given in the case.

The same medical expert was permitted to testify also that all the evidence presented did not show that the testatrix was either mentally competent or mentally incompetent. Such testimony, said the Supreme Court, was not permissible, as it allowed the expert in effect to say to the jury that the testimony of the expert witnesses who had preceded him was not entitled to any credence and therefore allowed the expert to usurp the function of the jury.

For these reasons, the Supreme Court set aside the judgment of the trial court sustaining the will and ordered a new trial.—*In re Elliott's Estate: Elliott v. Collins (Mich.), 257 N. W. 919.*

Accident Insurance: Death from Anesthesia.—The plaintiff, as beneficiary, sued on a policy of insurance that provided certain benefits if the insured's death should result directly and independently of all other causes from bodily injury effected solely through external, violent and accidental means, but not if death resulted directly or indirectly from bodily or mental infirmity. Judgment was given for the defendant insurance company, and the plaintiff appealed to the United States circuit court of appeals, fifth circuit.

The plaintiff claimed that the insured died from bodily injuries effected solely through external, violent and accidental means, in that an anesthetic was administered in the performance of an abdominal operation on the insured and the anesthetic, though skilfully administered and ordinarily harmless, produced death because of an impairment of the insured's heart, which was unknown to the physician who administered the anesthetic. This condition of the heart, the plaintiff claimed, was caused by an automobile accident that occurred shortly before the operation, but the date of which was not stated. The use of the anesthetic, said the circuit court of appeals, was intentional, and no mistake or slip is alleged in its administration. In addition to its usual and expected sedative results, an unexpected result occurred, due to a heart weakness of short duration but antedating the operation. There was an accidental death caused in part by an external means; that the means that caused death was accidental is not so plain. By the weight of authority, a means is not made accidental because some unexpected result follows, in addition to that which was intended to be accomplished. But irrespective of that, said the court, it is clear that the fatality cannot be said to have been effected *solely* by external violent means, because it was due also to the internal bodily weakness, with-

out which there would have been no death. This also was a "bodily infirmity" within the meaning of the exception in the policy, for infirmity includes abnormal weakness as well as acute disease. If a bodily infirmity, though unknown at the time, is a concurring cause without which death would not have resulted, the policy does not cover the case.

The judgment in favor of the insurance company was accordingly affirmed.—*Davis v. Jefferson Standard Life Ins. Co., 73 F. (2d) 330.*

Hospitals: Liability for Negligence of Special Nurse.—An abdominal operation was performed on the plaintiff at the defendant hospital by a physician selected by the plaintiff. He was thereafter cared for by his own physician and by nurses employed by him or by his physician—and not by hospital employees. Some time later he experienced great physical discomfort. The operation incision was opened and a toothpick was found and removed. Later, cotton also was found in his body. He sued the hospital, alleging that the toothpick and cotton found their way into his body while he was in the hospital, as a result of the hospital's negligence in furnishing the nurses who cared for him with what are commonly termed "toothpick applicators"; that is, toothpicks with cotton on each [sic] end for use in caring for his wound. From a judgment for the plaintiff, the hospital appealed to the district court of appeal, second district, division 1, California.

Both parties stipulated that it was the duty of the hospital to exercise ordinary care to furnish to the attendants of the patient suitable supplies, equipment and facilities commensurate with the requirements of his case, and to use reasonable care in providing the same for the use of those charged with his care and treatment. All the medical testimony, said the district court of appeal, was to the effect that the use of toothpick applicators with surgical dressings is a dangerous practice. Under the evidence in this case, can it be said that the injury which the plaintiff suffered was a natural or probable consequence of the act of the hospital in furnishing the toothpick applicators? In this case the persons who used the applicators were trained nurses employed by the plaintiff. They are members of a profession which the law recognizes as one of skill and learning. The hospital, if it furnished the toothpicks as the plaintiff contends, sent them to a professional employed by the plaintiff to care for him. If she used them with injurious consequences, her act was certainly one of a responsible and intelligent person, which relieves the defendant of any liability which might be created by its primary negligence.

The duty of the hospital to furnish suitable supplies and equipment, continued the court, does not make the hospital liable for furnishing articles which a trained nurse should know, from training and experience and the standards of care ordinarily used in her profession, are dangerous. If the article furnished is obviously unfit for the use for which it is furnished by the hospital, and the plaintiff's employee uses it in violation of all the standards of care of nursing practice, the defendant cannot be charged with any injurious effects from it.

The judgment in favor of the patient was accordingly reversed.—*Payne v. Santa Barbara Cottage Hospital (Calif.), 37 P. (2d) 1061.*

Dental Practice Acts: "Advertising" Not Synonymous with "Soliciting."—The dental practice act of North Carolina authorizes the state board of dental examiners to revoke the license of any dentist "guilty . . . of false notice, advertisement, publication, or circulation of false claims, or fraudulent misleading statements of his art, skill, or knowledge, or of his methods of treatment or practice . . . or [who] has by himself or another solicited professional business." Proceedings were instituted to revoke the license of a dentist, the respondent in this case, under an accusation charging him with soliciting professional business by paid advertisements in the newspapers and by signs in colors and of large dimensions on the building in which his office was located. The board revoked his license and, from a judgment of the superior court upholding the board's action, he appealed to the Supreme Court of North Carolina.

The dental practice act, said the court, inveighs against two offenses: (1) false advertising, and the circulation of false claims or fraudulent or misleading statements, and (2) soliciting professional business. There was no charge of false advertising or of the circulation of false claims or fraudulent or misleading statements. This appeal therefore raises the question only as to whether the use by a licensed dentist of paid advertisements of his work and prices in newspapers with a large circulation, and of signs in flaring colors and of large dimensions, constitutes such soliciting of professional business as is inhibited by the dental practice act. Advertising and soliciting are not synonymous terms. If they were so, every dentist who inserted a professional card in a registry, directory or other publication, and paid for such insertion, or who placed on the window or door of his office, or on the wall of the building in which his office is located, his name, followed by the word "dentist," would subject himself to an accusation that might lead to the revocation of his license. The act makes unlawful only the use of false advertising and the circulation of fraudulent and misleading statements, and the corollary follows that the use of truthful advertising and the circulation of truthful statements are not unlawful. The record contains no suggestion of any soliciting by the respondent otherwise than by advertising in newspapers and by signs.

The court expressly refrained from passing on the ethics of the advertising resorted to by the respondent and suggested that if the North Carolina board of dental examiners desires further to limit the nature and extent of the advertising to which members of their profession may lawfully resort, their remedy lies with the legislature and not the courts. The law-making branch of the government, the court said, if in its wisdom it saw fit, might make unlawful any kind of advertising by members of the dental profession, whether false or otherwise. For the reasons stated, the judgment of the superior court, upholding the action of the board in revoking the respondent's license, was reversed.—*In re Owen (N. C.), 177 S. E. 403.*

Society Proceedings

COMING MEETINGS

American Association of Railway Surgeons, Chicago, November 13-15. Dr. Louis J. Mitchell, 86 E. Randolph St., Chicago, Secretary.

American Clinical and Climatological Association, Princeton, N. J., Oct. 21-23. Dr. Francis M. Rackemann, 263 Beacon Street, Boston, Secretary.

American College of Surgeons, San Francisco, October 28-November 1. Dr. George W. Crile, 40 East Erie St., Chicago.

American Hospital Association, St. Louis, Sept. 30-Oct. 4. Dr. Bert W. Caldwell, 18 East Division Street, Chicago, Executive Secretary.

American Public Health Association, Milwaukee, Oct. 7-10. Dr. Reginald M. Atwater, 50 West 50th Street, New York, Executive Secretary.

American Society of Tropical Medicine, St. Louis, November 19-22. Dr. Alfred C. Reed, 350 Post Street, San Francisco, Secretary.

Association of American Medical Colleges, Toronto, Canada, Oct. 28-30. Dr. Fred C. Zapffe, 5 South Wabash Avenue, Chicago, Secretary.

Association of Military Surgeons of the United States, New York, Oct. 3-5. Dr. H. L. Gilchrist, Army Medical Museum, Washington, D. C., Secretary.

Central Association of Obstetricians and Gynecologists, Omaha, Oct. 10-12. Dr. Ralph A. Reis, 104 South Michigan Boulevard, Chicago, Secretary.

Delaware, Medical Society of, Wilmington, Oct. 8-9. Dr. William H. Speer, 917 Washington Street, Wilmington, Secretary.

Indiana State Medical Association, Gary, Oct. 8-10. Mr. T. A. Hendricks, 23 East Ohio Street, Indianapolis, Executive Secretary.

Inter-State Postgraduate Medical Association of North America, Detroit, October 14-18. Dr. W. B. Peck, 27 E. Stephenson St., Freeport, Ill., Managing Director.

Kansas City Southwest Clinical Society, Kansas City, Mo., Oct. 7-10. Dr. Ralph R. Coffey, 1103 Grand Avenue, Kansas City, Mo., Secretary.

Kentucky State Medical Association, Louisville, Sept. 30-Oct.3. Dr. A. T. McCormack, 532 West Main Street, Louisville, Secretary.

Mississippi Valley Medical Society, Quincy, Ill., Oct. 2-4. Dr. Harold Swanberg, 510 Maine Street, Quincy, Ill., Secretary.

Nevada State Medical Association, Elko, Oct. 25-26. Dr. Horace J. Brown, 120 North Virginia Street, Reno, Secretary.

Ohio State Medical Association, Cincinnati, Oct. 2-4. Mr. C. S. Nelson, Hartman Theatre Building, Columbus, Executive Secretary.

Omaha Mid-West Clinical Society, Omaha, Oct. 28-Nov. 1. Dr. J. D. McCarthy, 107 South 17th Street, Omaha, Secretary.

Pacific Coast Society of Obstetrics and Gynecology, Los Angeles, Nov. 6-9. Dr. T. Floyd Bell, 400 29th Street, Oakland, Calif., Secretary.

Pennsylvania, Medical Society of the State of, Harrisburg, Sept. 30-Oct. 3. Dr. Walter F. Donaldson, 500 Penn Avenue, Pittsburgh, Secretary.

Southern Medical Association, St. Louis, November 19-22. Mr. C. P. Loranz, Empire Building, Birmingham, Ala., Secretary.

Virginia, Medical Society of, Norfolk, Oct. 15-17. Miss A. V. Edwards, 1200 East Clay Street, Richmond, Secretary.

Current Medical Literature

AMERICAN

The Association library lends periodicals to Fellows of the Association and to individual subscribers to THE JOURNAL in continental United States and Canada for a period of three days. Periodicals are available from 1925 to date. Requests for issues of earlier date cannot be filled. Requests should be accompanied by stamps to cover postage (6 cents if one and 12 cents if two periodicals are requested). Periodicals published by the American Medical Association are not available for lending but may be supplied on purchase order. Reprints as a rule are the property of authors and can be obtained for permanent possession only from them.

Titles marked with an asterisk (*) are abstracted below.

American Journal of Pathology, Boston

11: 591-710 (July) 1935

Primary Melanosarcoma of Leptomeninges. A. J. E. Akelaitis, Rochester, N. Y.—p. 591.
Influence of Anaphylactic Shock on Finer Structure of Liver in Dog. H. L. Weatherford, Boston.—p. 611.
*Lesions in Roots of Pulmonary Artery and Aorta in Rheumatic Fever. L. Gross, New York.—p. 631.
Nuclear Inclusions Suggestive of Virus Action in Salivary Glands of Monkey Cebus Fatuellus. E. V. Cowdry and G. H. Scott, St. Louis. —p. 647.
Nuclear Inclusions in Kidneys of Macacus Rhesus Monkeys. E. V. Cowdry and G. H. Scott, St. Louis.—p. 659.
*Neuropathology of Experimental Vitamin Deficiency: Report of Four Series of Dogs Maintained on Diets Deficient in B Vitamins. Margaret Crane-Lillie Gildea, W. B. Castle, E. F. Gildea and S. Cobb, Boston.—p. 669.
Monocytes as Source of Alveolar Phagocytes. J. Ungar Jr. and G. R. Wilson, Pittsburgh.—p. 681.
Chronic Pulmonary Arteritis in Schistosomiasis Mansoni Associated with Right Ventricular Hypertrophy: Report of Case. E. Clark and I. Graef, New York.—p. 693.
Early Cardiac Infarction Caused by an Embolus of Caseous Tuberculous Material: Report of Case. E. M. Medlar, Mount McGregor, N. Y. —p. 707.

Lesions in Pulmonary Artery and Aorta in Rheumatic Fever.—Gross describes the lesions found within the roots of the pulmonary artery and aorta proper in 150 hearts, i. e., the purely musculo-elastic portions, as well as within the vessels found in their enveloping pericardial mantles. Sixty-six cases presented active rheumatic fever as manifested by the presence of fibrinous pericarditis, acute verrucous endocarditis, Aschoff bodies, eosinophilic collagen changes (fibrinoid) and other inflammatory phenomena in the myocardium. Thirty-four cases represented inactive rheumatic material, according to the criteria formulated by Rothschild, Kugel and Gross. The remaining fifty cases were from a nonrheumatic control series representing various age periods from birth to the ninth decade of life. This series was carefully selected to eliminate past or present hypertension, since this condition is associated with vascular changes in the periaortic and peripulmonic sheaths. After fixation of the heart in a 10 per cent neutral solution of formaldehyde sodium chloride, blocks were cut according to the standardized method of Gross, Antopol and Sacks. Sections were cut from each block and stained as a routine with hematoxylin and eosin and with Weigert's elastic and Van Gieson's connective tissue stains. An unexpectedly high incidence of capillarization was observed, both of the pulmonic and of the aortic roots. This occurred in 70 per cent and more of inactive as well as active cases, as compared to 25 per cent of the control nonrheumatic series. Not infrequently the capillaries were larger, more irregular and of wider distribution in the rheumatic series. It appears that the very florid inflammatory and destructive phenomena in the aortic root, together with the somewhat different observations in the pulmonic root and its pericardial sheath, serve to differentiate histologically syphilis from rheumatic fever. All the active rheumatic cases presented in the peripulmonic sheaths either a microscopic pericarditis or an acute exudative pericarditis, and in the inactive rheumatic series many cases showed scattered lymphocytes and large mononuclear cells in this area. It seems possible that this inflammatory condition of the pericardial mantle bears a causal relation to the markedly increased capillarization of the great vessel roots. At any rate, this mechanism must be considered a factor in addition to spread of the irritative agent by way of the vasa vasorum (Klotz) and by way of the main blood stream (Pappenheimer and VonGlahn). While scarring is not a conspicuous feature in the pulmonic root in rheumatic fever, it becomes extremely important in the aortic root, in which the lesions may be so extensive as to be confused with syphilis. In such instances the damage may undoubtedly express itself functionally by producing diminished resilience and elasticity of the great vessel roots. The finding of inflammatory lesions in 20 per cent of aortic roots in the active rheumatic series was not unexpected, even though the 6 per cent incidence of intimal verrucous lesions was certainly more than anticipated from gross observations. On the other hand, the 14 per cent incidence of inflammatory lesions in the pulmonic root, with one case showing a verrucous lesion of the intima, was surprisingly high and of considerable interest. The intimal reduplications are important histologically only when they are quite fresh and serve to indicate the presence of activity. The vascular lesions in the peripulmonic and periaortic mantles are similar to those described by Gross, Kugel and Epstein. The considerable increase in these lesions both in active and inactive cases is in keeping with the observations in the coronary ramifications within the myocardium proper. The somewhat lower incidence of the more characteristic lesions in the pulmonic and aortic roots of the inactive as compared to the active rheumatic fever series indicates that some of them may heal with little discernible residues, that some may become transformed into the less characteristic alterations seen in the control series due to age period changes, and that the more marked lesions probably occur in patients so violently afflicted with the disease that many fail to reach the inactive stages.

Neuropathology of Experimental Vitamin Deficiency.—Gildea and her associates state that seventeen dogs given a diet deficient in vitamin B (Cowgill) developed signs of acute disturbance of the central nervous system and died without treatment with vitamin B concentrates. Only minimal histologic changes were found in the central nervous system. Eight dogs given a similar diet, but whose acute neurologic signs were repeatedly and temporarily relieved with vitamin B concentrates, developed gradually a residual degree of spastic ataxia and eventually motor paralysis, with reflexes present. Definite histologic lesions of the central nervous system were found in all but one animal. Nissl stains of the cerebral and Purkinje cells and of the ventral horn cells revealed evidence of degeneration. Weigert-Pal stains of the spinal cords showed definite losses of myelin in seven dogs. The peripheral nerves of three dogs showed an increase of material staining with scarlet red or with the Marchi technic. The results of observations on the effect of partial starvation, of supplements of cod liver oil and of therapy with dried yeast on morphologic changes in the central nervous system were rendered inconclusive, probably because the basic deficiency was not sufficiently prolonged to produce morphologic changes in the nervous system of any of the animals.

Am. J. Roentgenol. & Rad. Therapy, Springfield, Ill.

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Bone Tumors. C. F. Geschickter, Baltimore.—p. 1.
Mucocele of Frontal Sinus, with Especial Reference to Roentgen Aspects and Report of Four Cases. A. Hartung and T. Wachowski, Chicago. —p. 30.
Cholesteatoma. L. J. Friedman, New York.—p. 37.
Cleidocranial Dysostosis: Case Report. W. W. Eldridge, A. Simon and R. Ramos, Washington, D. C.—p. 41.
Tuberculosis of Humeral Diaphysis and Cranial Vault: Case. L. D. Van Antwerp, Meriden, Conn.—p. 50.
Adenocarcinoma of Oral Cavity. W. L. Watson, New York.—p. 53.
*Radium Dosage and Technic in Carcinoma of Tongue. F. E. Simpson, Chicago.—p. 63.
Intraperitoneal Insertion of Radon and Gastro-Enterostomy in Carcinoma of Pyloric End of Stomach. I. Levin, New York.—p. 69.
Complications and Injuries in Radium Therapy. I. I. Kaplan, New York.—p. 77.
*Correction of Dietary Errors in Connection with Radium Treatment. D. T. Quigley, Omaha.—p. 81.
Ionization of Liquid Carbon Disulphide by Roentgen Rays. F. L. Mohler and L. S. Taylor, Washington, D. C.—p. 84.
Bactericidal Effects of Roentgen Rays: Note. F. L. Mohler and L. S. Taylor, Washington, D. C.—p. 89.

Radium Dosage in Carcinoma of the Tongue.—Simpson discusses the technic and dosage that he is employing in the treatment of carcinoma of the tongue. The application of radium to the surface of the tongue lesion is inadequate to

accomplish a clinical cure necessitating the implantation of radium or radon. In the average case of squamous cell carcinoma of the tongue with cell nests, which is radioresistant, the practice of implantation should be continued. Lymphocytic and transitional cell cancer without cell nests, which are radiosensitive, sometimes recede greatly or even disappear for a time under the influence of surface irradiations only. It seems safer to implant every carcinoma confined to the tongue, unless it is too extensive, regardless of its pathologic type. The implantation method in general should be limited to rather small, well circumscribed, favorably situated lesions, in which there appears great probability that radium or radon may be successfully implanted in every part of the growth and in which surface irradiation or excision has been generally found to be inadequate or inadvisable. If every part of a given neoplasm can be reached with tubules and the attendant conditions are favorable, a clinical cure frequently results. If every part of a given tumor cannot be reached and the attendant conditions are unfavorable, it is unwise to subject patients to a procedure that is somewhat heroic and painful, when it does not promise complete eradication of the disease. Success in radium therapy of carcinoma of the tongue depends largely on meticulous attention to a chain of details: roentgenograms of the lower jaw and chest, syphilis and diabetes are unfavorable factors in the radium treatment of carcinoma, hygienic condition of the mouth and teeth representing foci of infection. The author prefers to delay all ordinary disinfecting measures until the growth has been treated with short, powerful applications of radium. His discussion of the technic and dosage includes biopsy, the primary lesion, indications for implantation, methods of implantation, lead tubules, pitfalls, control of pain, protection of bone, metastases, nonpalpable and palpable nodes.

Dietary Errors in Connection with Radium Treatment.—Believing that a study of the diets of persons suffering from various kinds of tumor might be valuable, Quigley began an inquiry in 1922 and continued it through 1932. The number of patients involved was 2,707. Inquiry was made as to the food habits for as far back as the patient could remember and the relative amounts of various foods noted. In checking the cases, it was found that all were on more or less deficient diets and that none had cancer as a single disease. The deficiencies were in calcium, vitamins and iodine and cellulose; the concurrent diseases were those of the heart and blood vessels, the joints and the gastro-intestinal tract, with a few having cataracts and between 5 and 6 per cent diabetes. Obesity was a factor in more than 30 per cent of the cases. Many of the patients had been operated on for gallbladder disease and a large percentage were suffering occasional gallbladder colic; 95 per cent suffered from constipation or some form of stomach or intestinal disease. Some of the diets taken by these patients were almost completely composed of refined carbohydrates, an occasional salad being the only normal food eaten. The food consumed showed universal deficiencies in calcium, iodine and iron. Vitamin deficiencies were shown by certain signs and symptoms. The author has found the optimal requirements of vitamin A for adults to be 2 quarts of whole milk or its equivalent, for vitamin B 2 drachms (8 Gm.) of dried yeast or its equivalent, for vitamin C 12 ounces (360 cc.) of orange juice or its equivalent, and for vitamin D such an amount as may be represented by one hour of midday sun at half season or 2 drachms (8 cc.) of cod liver oil. Unless a sufficient amount of calcium is present, vitamin D is likely to prove irritating to the nervous system. If a sufficient amount of cellulose in its natural state is taken as implied under the term equivalents, there is no room left for any refined carbohydrates. It is important that sugar and patent flour products be eliminated, as these furnish energy and high calories without necessary physiologic concomitants, minerals, cellulose and vitamins. Table salt should also be eliminated and replaced by a mixture of salts corresponding to those in Ringer's solution. Patients with external accessible malignant manifestations who have followed this regimen have had 20 per cent less recurrences, have been relieved of the unpleasant effects of concurrent diseases and have enjoyed increased energy and freedom from fatigue, the most striking examples of benefit being in cases of associated arthritis, gastro-intestinal troubles and obesity. In this connection, no case of carcinoma showed any material improvement until the diet was so arranged that sugar disappeared from the urine. Therefore every person should be studied from the standpoint of the organism as a whole and all necessary dietary corrections made.

American Journal of Syphilis and Neurology, St. Louis

19: 313-472 (July) 1935

Incidence of Syphilis in the American Negro. R. S. Jason, Washington, D. C.—p. 313.
*Arsphenamine Poisoning Occurring Among Negro Women. G. Walsh and C. S. Stickley, Fairfield, Ala.—p. 323.
Syphilitic Anemia with Diffuse Osteitis and Superinfection. E. B. Tauber and L. Goldman, Cincinnati.—p. 339.
Cisternal Puncture in Syphilis. J. T. Belgrade, Wheeling, W. Va., and C. S. Wright, Philadelphia.—p. 344.
Effect of Treponema Pallidum Infection on Metabolism of Rabbit Testis. Ruth M. Kraft, C. S. Robinson and S. Harris Jr., Nashville, Tenn.—p. 354.
Comparative Study of Rosenthal Precipitation Test with Wassermann Reaction and the Kahn Test in Syphilis. K. L. Yang, Shanghai, China.—p. 364.
Cause of Zone Phenomenon in Complement Fixation and Its Relation to Greater Sensitivity of Icebox Type of Wassermann Reaction: Critical Study. B. S. Levine, Chicago.—p. 367.
Syphilis of Spinal Cord. N. W. Winkelman, Philadelphia.—p. 378.
Pseudotumor Cerebri. A. Silverstein, Philadelphia.—p. 399.
Myotonia Acquisita: Case Showing Myotonia in Both Lower Limbs Following Injury. M. T. Moore, Philadelphia.—p. 409.
Encephalomyelitis Following Use of Serum and Vaccine: Report of Two Cases, One with Autopsy. N. W. Winkelman and N. Gotten, Philadelphia.—p. 414.

Arsphenamine Poisoning in Negro Women.—Walsh and Stickley believe that arsphenamine poisoning in the Negro differs in many ways from the same type of poisoning in the white race. Of fourteen cases of arsphenamine poisoning admitted to the Employees' Hospital in five years, eleven occurred in Negresses. The fact that the symptoms and skin changes in the Negro do not receive the attention that they do in the Caucasian is believed to be one reason why these cases are not discovered by the physician in time to prevent an occasional fatality. The mental attitude of the Negro, marked by disinterestedness, secretiveness and a certain callousness toward his own suffering, is believed to be another reason why the treatment is persisted in until the poisoning has become an accomplished fact. The fragility and small caliber of the veins of the Negress and the difficulties incident to giving the arsphenamine without spilling into the perivenous tissue are suggested as reasons for the frequency of arsphenamine poisoning in the female sex. Eosinophilia was a common observation. Whether or not its presence is an expression of an allergic phenomenon the authors do not know. The effects of epinephrine in allaying the itching were almost miraculous and suggested an underlying allergy.

American Journal of Tropical Medicine, Baltimore

15: 407-494 (July) 1935

Theobald Smith and Insect Transmission of Disease. C. F. Craig.—p. 407.
*Brucellosis in Man: Treatment with New Antiserum. W. B. Wherry, A. E. O'Neil and L. Foshay, Cincinnati.—p. 415.
Natural Immunity and Susceptibility of Culicine Mosquitoes to Avian Malaria. C. G. Huff, Chicago.—p. 427.
New Species of Tick Which Is a Vector of Relapsing Fever in California. C. M. Wheeler, Berkeley, Calif.—p. 435.
*Use of Aqueous Smears in Study and Identification of Ameba of Man. E. G. Hakansson, Panama, Republic of Panama.—p. 439.
Plumbing in Relation to Infectious Diseases. H. N. Bundesen, Chicago.—p. 455.
Experimental Studies with Torula from Knee Infection in Man. J. F. Kessell and F. Holtzwart, Los Angeles.—p. 467.
Relative Susceptibility of Anopheles Quadrimaculatus to Plasmodium Vivax and Plasmodium Falciparum. M. F. Boyd, W. K. Stratman-Thomas and S. F. Kitchen, Tallahassee, Fla.—p. 485.

Antiserum Treatment of Brucellosis.—Wherry and his co-workers produced antiserums for the initial therapeutic trials from goats after subcutaneous inoculations with chemically treated suspensions of Brucella. The serums used during the first year represented six strains, one bovine and five porcine. At the beginning of the second year five melitensis strains were added. During the past year the authors have adopted a total amount of 60 cc., usually given in three daily injections of 20 cc. each, as the average adult dosage for infections of average severity. Unconcentrated serum has been given by vein, intramuscularly and subcutaneously. It is clear that some of their first patients did

not receive enough serum. Serum sickness has been infrequent and usually mild. Of their twenty patients who responded favorably to serum therapy, the indicated averages are significantly encouraging. After serum therapy the average duration of fever was nine days, the average duration of symptoms was fifteen days and the average duration of disability was three and a half weeks. The average total disability period was two and three-fourths months, and the average time at which serum therapy was begun was at one and nine-tenths months. Hence two thirds of the total disability period represents elapsed time of illness before serum was given. There were six cases that were either doubtfully improved or clearly unimproved by serum therapy. One doubtfully improved patient was a man with an unusually severe infection, with continuous high fever, profound prostration, severe anemia, a palpable spleen and an enlarged liver with intense general icterus. In three of the patients, who had either bland or extremely slight, transient, favorable responses, the disease had existed for a year or more before treatment was begun. Experience with serum therapy in tularemia has taught the authors that the chronic infections due to Bacterium tularense are most frequently not modified by serum therapy. The possibility of a similar refractory state in chronic brucellosis must be considered. They consider the time of administration an important factor in successful therapy and think it advisable to use it early in the course of illness, preferably before the end of the fourth month of symptoms. The effect of serum therapy on the fever curve was usually shown by a fairly prompt fall in temperature to normal, accompanied by a rather well marked antitoxin-like response characterized by an amelioration of myalgias, arthralgias, headache, gastric symptoms and general subjective discomfort, including sweats. The chief therapeutic action of the antiserum is very probably its capacity to induce specific phagocytosis.

Aqueous Smears in Identification of Ameba.—Hakansson presents the observations of the trophozoites of Endamoeba histolytica, coli and nana and of Diendamoeba fragilis that he has observed in aqueous smears. The observations indicate that certain features in the morphology of the ameba can be demonstrated in the aqueous medium: (1) the distensibility of the ectoplasm of Endamoeba histolytica, (2) the relative fragility of the ectoplasm of Endamoeba coli and nana, (3) the resilience of the ectoplasm of Diendamoeba fragilis and (4) the remarkable strength of the nuclear membrane of Endamoeba histolytica and coli. Some of these characteristics together with the visibility of the nuclei help to differentiate the species of ameba in the human stool. The annoyance of Blastocystis hominis can be eliminated by the use of the aqueous smear.

Archives of Otolaryngology, Chicago

22: 1-130 (July) 1935

Contact Ulcer of Larynx. C. Jackson and C. L. Jackson, Philadelphia.—p. 1.
Influence of Anatomic Structure in Diseases of Nose and Ear. E. U. Wallerstein, Richmond, Va.—p. 16.
*True Papilloma of Nasal Cavity. R. Kramer and M. L. Som, New York.—p. 22.
Anomalous Capillary Plexus in Scala Tympani. Dorothy Wolff, St. Louis.—p. 44.
Malignant Tumors of Nasopharynx. L. H. Heine, Boston.—p. 51.
Considerations on Suppuration of Petrous Pyramid. M. C. Myerson, New York; H. W Rubin and J. G. Gilbert, Brooklyn.—p. 62.
Bilateral Encapsulated Peritonsillar Abscess in a Child: Review of Literature and Report of Case. R. W. Teed, Ann Arbor, Mich.—p. 90.

True Papilloma of Nasal Cavity.—An analysis by Kramer and Som of the literature reveals the fact that at least four distinctly different types of tumors have been included under the heading of papilloma. These are: 1. Mucous polyps, or soft papillomas (Hopmann). The true inflammatory nature of these growths can no longer be questioned, regardless of their epithelial lining. While these polyps are lined most frequently by columnar epithelium, metaplastic changes with transition to squamous epithelium are not uncommon. Such changes are undoubtedly associated with external physical, chemical and inflammatory processes in the nasal chambers. 2. Innocent cutaneous warts arising from the vestibule of the nose, especially on the antero-inferior portion of the septum. They are localized, slightly elevated, papillary epithelial hyperplastic lesions surrounded by an area of normal mucosa. They can be removed with ease and show no tendency to recurrence. The literature contains records of numerous instances in which such lesions have been reported erroneously as true papillomas of the nose. 3. Papillary carcinomas, which are malignant neoplasms that possess invasive characteristics and tend to metastasize to regional lymph nodes. These tumors are often referred to as malignant papillomas. Although their development on the basis of a true papilloma is a possibility, they should be classified with the carcinomas. Only a small percentage of the growths heretofore reported as papilloma fall into the category of true papillomas. Papilloma durum is a true nonmalignant neoplasm of epithelial origin and should not be confused with the preceding types. Papilloma durum appears in the form of grayish red, indurated papilliferous new growths, which bleed readily on manipulation. Their hardness is primarily dependent on the marked proliferation of the epithelial tissue. These neoplasms arise from the nasal accessory sinuses and the deeper structures of the nasal cavity. They readily involve a large area of mucous membrane and may attain a huge size. Their tendency to multiple recurrences and malignant transformation is characteristic.

Arch. of Physical Therapy, X-Ray, Radium, Chicago

16: 385-448 (July) 1935

Status of Electrosurgical Prostatic Resection. H. C. Rolnick, Chicago.—p. 391.
Electrosurgery in Urology. F. G. Harrison, Philadelphia.—p. 393.
Immunologic Studies in Hyperpyrexia. Ruth Westlund Jung, Chicago.—p. 397.
Nasal Ionization by New Simplified Technic. M. H. Cottle, Chicago.—p. 405.
Orthopedic Management of Anterior Poliomyelitis. A. M. Rechtman, Philadelphia.—p. 411.
Relation of Body Mechanics to Surgical Diagnosis. W. Bates, Philadelphia.—p. 416.
Delayed Union of Fractures. A. F. Voshell, Baltimore.—p. 421.
Arthroscopy by Fluorescence: Experimental Study. M. S. Burman and C. J. Sutro, New York.—p. 423.
The American Congress of Physical Therapy: Ten Years of Progress. A. R. Hollender, Chicago.—p. 425.

Archives of Surgery, Chicago

31: 175-344 (Aug.) 1935

Pilonidal Sinus: Explanation of Its Embryologic Development. Mims Gage, New Orleans.—p. 175.
Intradiploic Epidermoid (Cholesteatoma) of the Skull. P. C. Bucy, Chicago.—p. 190.
*Aberrant Pancreatic Tissue in Gastro-Intestinal Tract: Report of Twenty-Four Cases. C. D. Branch and R. E. Gross, Boston.—p. 200.
*Ulcerative Colitis: Study of Bacteria in Isolated Colons of Three Patients by Cultures and by Inoculation of Monkeys. G. M. Dack, T. E. Heinz and L. R. Dragstedt, Chicago.—p. 225.
*Peptic Ulcer Following Experimental Jejunocolostomy. P. E. McMaster, Los Angeles.—p. 241.
Infectious Gangrene of Skin Due to Bacterial Synergism, with Particular Reference to Noma and Postoperative Cutaneous Gangrene. N. F. Hicken, Omaha.—p. 253.
Lateral Dislocation of the Wrist Joint: Report of Case of Radiocarpal Dislocation of Radial Side. R. K. Packard and J. D. Kirshbaum, Chicago.—p. 266.
Primary Thrombosis of Axillary Vein: Anatomic and Roentgenologic Study of Certain Etiologic Factors and Consideration of Venography as Diagnostic Measure. J. R. Veal and Elizabeth M. McFetridge, New Orleans.—p. 271.
*Clinical Study of Spermatogenesis of Undescended Testicles. D. W. MacCollum, Boston.—p. 290.
Cystic Hygroma of the Neck. D. P. MacGuire, New York.—p. 301.
Bactericidal Effect of Hirudin and Heparin: I. Intravenous Injection of Hirudin and of Heparin and Leeching in Experimental Bacteremia. A. Ochsner and H. R. Mahorner, New Orleans.—p. 308.
Review of Urologic Surgery. A. J. Scholl, Los Angeles; E. S. Judd, Rochester, Minn.; J. Verbrugge, Antwerp, Belgium; A. B. Hepler, Seattle; R. Gutierrez, New York, and V. J. O'Conor, Chicago.—p. 315.

Aberrant Pancreatic Tissue in Gastro-Intestinal Tract.—Branch and Gross report twenty-four other cases in which aberrant pancreatic tissue was found in various locations in the wall of the alimentary canal. In three instances the tissue was found in the stomach or pylorus; in ten, in the duodenum (in one in a duodenal diverticulum); in four, in the jejunum; in one, in the ileum, and in six in a Meckel diverticulum. These structures contained ductal and acinar elements the histologic structure of which closely resembled that of normal pancreatic tissue. In fifteen specimens there were no islets of Langerhans in the sections studied, but in the other nine cases there were typical islets. The age of the patients in whom the

anomalous tissue was found varied from 8 days to 82 years. The cases occurred in equal numbers in males and in females. The presence of this aberrant pancreatic tissue in the gastro-intestinal tract probably represents a congenital anomaly in most, if not in all, instances. Four of these twenty-four cases had important pathologic significance. In one of these the nodule caused pyloric obstruction, and in the other three it was the site of ulceration in the stomach or duodenum. Such a nodule in the wall of the gastro-intestinal tract has been mistaken for carcinoma. The gross appearance of the tissue should indicate that it is pancreatic in type and should obviate the danger of unnecessary removal when it is not the cause of intestinal obstruction or the site of an important pathologic lesion.

Ulcerative Colitis.—Dack and his associates observed that the isolated colons of the three patients in whom ileostomies had been performed contained at first many species of organisms in large numbers. After some months the flora became largely anaerobic. In all three cases the same type of organism eventually predominated; it closely resembled Bacteroides fragilis and funduliformis (Thompson and Beaver), Actinomyces necrophorus (Shaw, Cunningham) and Bacillus necrophorus (Orcutt). This organism was pathogenic to rabbits and, following subcutaneous injections of large amounts of culture, produced local abscesses, which tended to heal after a long time. The organisms isolated were similar to the necrophorus organisms. In mediums they produced a putrid odor resembling that of butyric acid. They grew well on blood agar and serum dextrose mediums and in dextrose mediums to which a small amount of cystine was added. Exposure to oxygen was highly lethal in a short period. Complement-fixing antibodies have been demonstrated in the serum of four patients with ulcerative colitis, with antigen prepared from the predominating anaerobic organism cultured from the isolated colons of two patients. Very slight fixation of complement occurred with an antigen of monkey origin. The serum of one young adult without a history of intestinal lesions gave slightly positive results, whereas the serum of four other healthy young adults gave negative results. The serum taken from one patient gave a negative reaction. This result is difficult to explain in view of the agglutination reactions, which were positive. There was extensive disease of the intestine in the four cases in which the serum gave positive reactions. The complement fixation tests with the serum of the three monkeys tested were all positive, but in varying degrees. Agglutination tests were performed, the serum of five patients with ulcerative colitis against strain 40 being used. Agglutinins were present in all this serum. The serum from three healthy persons contained no agglutinins for this strain, whereas the serum from a fourth healthy person contained only a trace of agglutinins and then only in the strongest dilution of serum. Bacteriologic and serologic studies in a larger series of cases of ulcerative colitis may help to evaluate the significance of the organism described.

Peptic Ulcer Following Experimental Jejunocolostomy.—McMaster performed duodenocolostomy on twenty dogs without resecting the intestine between the points of duodenal transection and anastomosis into the colon in an endeavor to determine how often peptic ulceration occurred after jejunocolostomy both with and without retention of the intestine between the points of anastomosis and, if possible, what the etiologic factor might be. He found that, following jejunocolostomy in which the distal portion of the jejunum and the ileum were left in place as a blind stump, acute, subacute or chronic peptic ulceration developed in thirteen dogs operated on. Three of the ulcers perforated the wall of the intestine, leading to peritonitis. In three dogs on which duodenocolostomy was performed, the distal portion of the duodenum, the jejunum and the ileum being left as a blind stump, peptic ulceration was not observed. When a jejunocolostomy was performed with resection of the intervening intestine, peptic ulceration occurred in two of eleven dogs operated on. A rather marked loss of weight occurred in nearly all these animals, but this did not seem to be the etiologic factor responsible for the peptic ulcers. Gastritis and duodenitis, as evidenced by inflammatory reaction in the surrounding walls of the stomach and duodenum, seemed to follow rather than precede the peptic ulceration, as nearly as could be determined by microscopic studies.

Study of Spermatogenesis of Undescended Testicles.—MacCollum studied the fertility of eighty-nine men with undescended testicles. He forms three conclusions: 1. Except in a small percentage of cases, the fertility of all persons with cryptorchidism seems to be lower than that of the normal person. 2. The cosmetic result after orchiopexy cannot be used as a criterion of fertility. 3. In eighteen patients with bilateral undescended testicles on whom orchiopexy had been done there was definite fertility in eleven, and in three more, in whom the counts were lowered but active sperm were present, potential fertility. The proportion of definite fertility in persons who have undergone orchiopexy may then be computed as 61 per cent, in contrast to the estimated 10 per cent in persons without orchiopexy. In the author's opinion these statistics definitely make orchiopexy a justifiable procedure. His main purpose has been to stimulate an interest in other clinics to carry out a similar type of investigation. He is continuing the investigation and hopes to correlate the types of orchiopexy with the resulting spermatogenesis.

Journal of Biological Chemistry, Baltimore

110: 531-802 (Aug.) 1935. Partial Index

Effect of Heat and Hot Alcohol on Liver Proteins. W. H. Seegers and H. A. Mattill, Iowa City.—p. 531.
Extraction of Cholesterol from Blood Serum. I. J. Drekter, A. Bernhard and J. S. Leopold, New York.—p. 541.
Enzymic Method for Estimation of True Vitamin C. H. Tauber and I. S. Kleiner, New York.—p. 559.
Histochemistry of the Adrenal Gland: II. Quantitative Distribution of Lipolytic Enzymes. D. Glick and G. R. Biskind, San Francisco.—p. 575.
Histochemistry of the Hypophysis Cerebri: Quantitative Distribution of Vitamin C. D. Glick and G. R. Biskind, San Francisco.—p. 583.
Physicochemical Study of Blood Serums. J. Zozaya, Gladwyne, Pa.—p. 599.
Comparison of Serum, Heparinized Plasma and Oxalated Plasma in Regard to Cholesterol Content. W. M. Sperry and R. Schoenheimer, New York.—p. 655.
Absence of Allocholesterol in the Organism. R. Schoenheimer, New York; H. Dam and K. von Gottberg, Freiburg, Germany.—p. 659.
Absorbability of Allocholesterol. R. Schoenheimer, New York.; H. Dam and K. von Gottberg, Freiburg, Germany.—p. 667.
Thyroglobulin Studies: I. Thyroxine and Iodine Content of Normal and Goitrous Human Thyroglobulin. J. W. Cavett, C. O. Rice and J. F. McClendon, Minneapolis.—p. 673.
Determination of Iron in Biologic Materials. G. E. Farrar Jr., Ann Arbor, Mich.—p. 685.
Derivatives of Glucuronic Acid: V. Synthesis of Glucuronides. W. F. Goebel and F. H. Babers, New York.—p. 707.
Study of Concentration and Properties of Two Amylases of Barley Malt. M. L. Caldwell and S. E. Doebbeling, New York.—p. 739.
Microquinhydrone Electrode: Its Application to Determination of Hydrogen Ion Concentration of Glomerular Urine of Necturus. J. A. Pierce, Baltimore, and H. Montgomery, Philadelphia.—p. 763.
Electric Heater Designed to Prevent Losses from Creeping in Evaporation of Concentrated Salt Solutions Preliminary to Mineral Analysis. G. M. Guest and E. Leva, Cincinnati.—p. 777.

Journal of Immunology, Baltimore

29: 1-86 (July) 1935

Effect of Injection Methods on Species Specificity of Serum Precipitins. H. R. Wolfe, Madison, Wis.—p. 1.
Nature of Postanaphylactic State in Guinea-Pigs: Hyperglycemia. I. Ostromislensky and M. Openchowski, New York.—p. 13.
Postanaphylactic State in Guinea-Pigs. I. Ostromislensky and M. Openchowski, New York.—p. 19.
Relationship of Circulating Antibody to Local Inflammatory Reaction to Antigen (the Arthus Phenomenon). J. T. Culbertson, with assistance of J. F. Kent, New York.—p. 29.
Failure of Concentrated Diphtheria Antitoxin to Give Ramon Flocculation Reaction with Toxin. H. Eagle, Philadelphia.—p. 41.
*Studies on Scarlet Fever Anatoxin: Simultaneous Immunization Against Scarlet Fever and Diphtheria. K. Ando and S. Nagata, Dairen, South Manchuria.—p. 47.

Studies on Scarlet Fever Anatoxin.—Ando and Nagata observed that antigenicity of the so-called scarlet fever anatoxin produced by detoxifying scarlet fever toxin with formaldehyde and heat is due to presence of toxoid. Rabbits can be used for the determination of antigenicity of scarlet fever anatoxin. The antigenicity of the purified and concentrated scarlet fever anatoxin has been demonstrated by animal and human test. The antigenicity of the anatoxin prepared from scarlet fever toxin produced in a semisynthetic medium has been demonstrated. The addition of alum seems to increase the antigenicity of scarlet fever anatoxin. The degree of immunity conferred on rabbits by immunization with combined scarlet fever and diphtheria anatoxin is as high as that conveyed by a single anatoxin.

Journal of Nervous and Mental Disease, New York

82: 125-248 (Aug.) 1935

Bromide Permeability Test in Schizophrenia. H. T. Carmichael, J. C. Rheingold and F. E. Linder, Worcester, Mass.—p. 125.
Paraplegias: Their Significance in General Practice. G. B. Hassin, Chicago.—p. 134.
Rôle of Psychologic Maladjustment in College and in Later Placement. Elizabeth Ann Sullivan, Cambridge, Mass.—p. 147.
*Studies of Blood Sugar Curves in Mental Disorders. S. Katzenelbogen and W. S. Muncie, Baltimore.—p. 162.
Ameliorative Effects of Therapeutic Castration in Habitual Sex Offenders. A. W. Hackfield, Seattle.—p. 169.

Blood Sugar Curves in Mental Disorders.—Katzenelbogen and Muncie obtained repeated blood sugar curves during the course of various psychoneurotic and psychotic conditions. On many occasions, improvement in the curve coincided with improvement in the mental state. Discrepancies between the former and the latter, however, were not infrequently observed: (1) normal blood sugar curve associated with quite marked emotional reactions, (2) anomalous curve paralleled by average spontaneous activity, (3) relapse in the blood sugar curve coinciding with clinical improvement and (4) relapse in the patient's condition accompanied by improvement in the blood sugar curve. No correlation could be established between the blood sugar curves and the various kinds of emotional reactions considered separately. The explanation for this is that in the authors' patients emotional manifestations did not present themselves separately but always in more or less inclusive combinations. If, in some of their patients, one or another kind of emotion stood out conspicuously, it also was accompanied by other emotional reactions. In these patients no specific types of curves were obtained that could be attributed to one or another apparently predominant emotional manifestation. The study suggests that the relationship between blood sugar curves and various kinds of emotions in human beings can be adequately studied only under experimental conditions: in individuals in whom particular emotional reactions can be provoked separately, and in individuals who, under the influence of certain occurrences equivalent to experiments, will display rather single specific emotions.

Journal of Pediatrics, St. Louis

7: 1-156 (July) 1935

Leukocytes in Infancy and Childhood: Statistical Analysis of One Thousand and Eighty-One Total and Differential Counts from Birth to Fifteen Years. K. Kato, Chicago.—p. 7.
Erysipelas in Children Under Two Years of Age: Clinical Study. C. S. Culotta, New Haven, Conn.—p. 16.
*Antirachitic Properties of Irradiated Evaporated Milk Fed to Normal Babies Under Home Conditions. R. A. Strong, E. F. Naef and Ina M. Harper, New Orleans.—p. 21.
Intussusception Occurring in the Course of Paratyphoid Fever. J. Mignone and J. M. Arena, Durham, N. C.—p. 37.
Unusual Case of Glomerular Nephritis with Uremia. R. H. Dennett and C. H. Myron, New York.—p. 40.
Spontaneous Hypoglycemia Due to Hyperinsulinism in a Chlid: Report of Case with Autopsy Findings. A. M. Dannenburg, M. A. Bell and B. Gouley, Philadelphia.—p. 44.
Infant Mortality in New York City One Hundred Years Ago. C. Bolduan and L. Weiner, New York.—p. 55.
Is Benefit of Lactic Milk in Infant Feeding Due to Bactericidal Action of Lactic Acid? K. B. Rothey, Durham, N. C.—p. 60.
Bacteriologic Studies of Three Small Epidemics of Infectious Diarrhea in Children: Two Caused by Bacillus Dysenteriae (Sonne) and One by Bacillus Dispar. Marion M. Johnston and Mildred J. Kaake, Toronto.—p. 65.
Tonsil and Adenoid Problem: Systemic Influence of Upper Respiratory Infection. G. M. Coates and W. Gordon, Philadelphia.—p. 70.
Poisoning from Bite of Black Widow Spider (Latrodectus Mactans): Case Report. E. H. Rohlfing and B. M. Bullington, St. Louis.—p. 79.
Vitamin A and Infection. I. F. Gittleman and A. S. Wiener, Brooklyn.—p. 81.
*Endocrine Studies in Infants and Children: II. Time of Onset of Teething, Walking and Talking in Endocrine Disorders: Its Relationship to Intelligence in Endocrine and Nonendocrine Conditions. M. B. Gordon and L. Kuskin, Brooklyn.—p. 89.

Antirachitic Properties of Irradiated Evaporated Milk.—Strong and his co-workers fed twenty-two normal, artificially fed infants, living in poor to middle-class homes, irradiated evaporated milk without any additional vitamin D. The period of the study embraced approximately the first six months of life of the individual infants. A control group of eleven normal infants was fed a formula of whole cow's milk, with from 10 to 15 drops (0.6 to 1 cc.) of viosterol daily or 4 teaspoonfuls of plain cod liver oil as the source of vitamin D. The average daily consumption of evaporated milk ranged from 6 ounces (180 cc.) in the 1 to 4 week group to 16 ounces (480 cc.) in infants 6 months of age or more, giving a variation of from 26.6 to 58.9 units in the average vitamin D content of the food. Roentgenograms of the forearms of the twenty-two infants fed irradiated evaporated milk, taken at approximately 6 months of age, showed "slight evidence of rickets" in two of the infants. None of the infants in the control group showed roentgen evidence of rickets. Irradiated evaporated milk containing 3.8 Steenbock units to the ounce offers a source of vitamin D in an amount sufficient to reduce greatly the incidence or severity of rickets among patients whose parents either have not been educated to the necessity of antirachitic supplements to the food of all babies or who cannot afford them. As yet the irradiation of evaporated milk should not be relied on exclusively to provide protection to all infants throughout the first year of life. It should be supplemented with additional vitamin D units in the early months of life when the intake of irradiated evaporated milk may be insufficient to provide the unitage necessary to protect the infant.

Endocrine Studies in Children.—Gordon and Kuskin present a statistical study of the time of onset of teething, walking and talking in endocrine disturbances and of the relationship of intelligence to the developmental rate. Of 570 children studied, 369 presented evidence of endocrine disturbance and 201 manifested some degree of mental retardation without any sign of endocrine dyscrasia. The endocrine group is almost evenly divided into those with normal intelligence and those with mental retardation. 1. The time of onset of teething, walking and talking depends on four factors: the functional activity of the thyroid and of the growth hormone of the anterior pituitary lobe; nonendocrine factors, such as racial stock, familial tendencies, chronic conditions (such as rickets), acute infections; the mentality of the infant in the first 6 months of life, and the chronological relationship between time of inception of the influencing factor (endocrine or nonendocrine) and the normal time of teething, walking and talking. 2. In a mentally normal child, the time of onset of teething, walking and talking may serve as a criterion of endocrine function. Delay in the appearance of one or all indicates endocrine disturbance, provided all possible nonendocrine factors are excluded. 3. In a mentally retarded child, the time of onset of teething, walking and talking cannot be considered a diagnostic criterion of endocrine disorder. 4. Teething is within normal age limits in mentally normal children with adiposogenital dystrophy, thyropituitary obesity and hypothyroidism. In the pituitary group there seems to be a relationship between the time of onset of teething and general growth. Dentition is delayed to the greatest extent in anterior pituitary deficiency of growth and in childhood myxedema. Premature teething was noted in 22.4 per cent of the pituitary cases. The time of eruption in hypothyroidism depends on the relationship between time of inception of the dyscrasia and normal teething time and also on the mentality of the infant in the first six months of life. 5. Unaided walking appears in mentally normal infants at about the same average time in all endocrine conditions except hypothyroidism, in which there is a slight delay. 6. The onset of talking is within normal limits in mentally normal children in all pituitary conditions and is slightly delayed in hypothyroidism. 7. Infants with mental retardation teethe, walk and talk later than mentally normal infants in the same endocrine groups. Those with mental retardation due to nonendocrine antenatal factors, such as mongolism, congenital syphilis and microcephalus, teethe, walk and talk later on the average than those with postnatal disorders, such as epilepsy, encephalitis or brain injury. Considered as two groups, children with nonendocrine mental retardation teethe, walk and talk later than those with endocrine disorders. 8. The relationship between endocrine conditions, mental retardation and delay in onset of teething, walking and talking may be as follows: All may be expressions of some common factor present during antenatal or neonatal life. The glandular disturbance may be the cause of the delayed developmental rate and/or the mental retardation. The delay may be due to the mental retardation irrespective of the existing endocrine disorder.

Minnesota Medicine, St. Paul

18: 491-560 (Aug.) 1935

Historical Notes on the Minnesota Valley Medical Association and the Southern Minnesota Medical Association. M. C. Piper, Rochester. —p. 491.
Influence of Gastric Lavage on Familial and Nonfamilial Erythremia. J. F. Briggs and H. Oerting, St. Paul.—p. 499.
Idiopathic Hypochromic Anemia. S. H. Boyer Jr., Duluth.—p. 504.
Ascites of Indeterminate Origin. M. W. Binger and N. M. Keith, Rochester.—p. 510.
Amebiasis: Diagnosis, Prevention and Treatment. P. W. Brown and T. B. Magath, Rochester.—p. 515.
Treatment of Head Injuries. R. Earl, St. Paul.—p. 521.
Dysmenorrhea. L. W. Barry, St. Paul.—p. 525.
Nonorganic Causes of Fatigue: Concept of Fundamentals. N. Johnson, Minneapolis.—p. 531.
Cutis Verticis Gyrata Formation. J. F. Madden, St. Paul.—p. 536.
The Milwaukee Convalescent Serum Center. M. Hardgrove, Milwaukee. —p. 541.

Nebraska State Medical Journal, Lincoln

20: 281-320 (Aug.) 1935

Treatment of Chronic Arthritis. B. L. Wyatt, Tucson, Ariz.—p. 281.
*Atypical Leukemic States and Leukemoid Reactions. A. S. Rubnitz, Omaha.—p. 287.
Deficient Menstruation. S. A. Osheroff, Omaha.—p. 292.
Nonspecific Granuloma of Gastro-Intestinal Tract. J. M. Shramek and B. C. Russum, Omaha.—p. 296.
Progress of Surgery: Review of Literature for First Six Months of 1935. H. H. Davis, Omaha.—p. 301.
Dr. Joseph N. McCormack of Kentucky and United States of America. W. J. Hammill, Omaha.—p. 305.

Atypical Leukemic States and Leukemoid Reactions.—Rubnitz presents four atypical cases of leukemia in which an individual hematologic picture was observed. From their study he concludes that malignant tumors of lymphoid tissue may establish a free communication with the circulation; tumor cells are fed then to the blood stream from such a focus. The cellular composition of the blood in such cases may be that of normal blood with the added tumor cells. The tumor cells may vary in their makeup in the same way as different lymphosarcomas vary histopathologically. The blood, on examination, may have the appearance of leukemic blood. There is, however, this basic difference: In true leukemias one is dealing with a primary disturbance of the hematopoietic system as a whole and, because of that, all the elements of the blood are affected; whereas, in the blood dyscrasias on a lymphoid tumor basis abnormalities only in the lymphoid elements may be seen; the rest of the cellular constituents of the blood are not affected. Of course, sooner or later, a situation is reached in which the hematopoietic tissue as a whole is invaded by the malignant cells and a picture of frank leukemia may set in. The author's first three cases exemplify atypical leukemic states superimposed on the basis of lymphosarcoma. Epithelial tumors ordinarily do not affect the cellular composition of the blood alone. A breaking down epithelial tumor may bring about puzzling bizarre changes in the blood.

New Orleans Medical and Surgical Journal

88: 73-138 (Aug.) 1935

*Treatment of Some Vascular Disturbances of Extremities. I. Cohn, New Orleans.—p. 73.
Treatment of Hirschsprung's Disease by Spinal Anesthesia: Preliminary Report. J. D. Rives and L. H. Strug, New Orleans.—p. 81.
Renal Tuberculosis. B. B. O'Mara, Biloxi, Miss., and C. H. McCall, Gulfport, Miss.—p. 85.
Plea for Better Obstetrics. C. Le Baren, Gulfport, Miss.—p. 89.
Incidence and Clinical Manifestations of Lymphogranuloma Inguinale in New Orleans. E. von Haam and L. Lichtenstein, New Orleans.—p. 92.
*Use of Artificial Pneumothorax in Treatment of Lobar Pneumonia. I. L. Robbins, New Orleans.—p. 102.
Modified Murphy Tube for Constant Suction Drainage of Gastro-Intestinal Tract. E. L. Sanderson and P. D. Abramson, Shreveport, La.—p. 109.

Treatment of Some Vascular Disturbances of the Extremities.—Cohn states that in the treatment of occlusive vascular disorders all measures which attempt to cure a symptom or manifestation which is local in character are basically wrong from a psysiologic standpoint. The fundamental factor of importance is that manifestations of nutritional disturbances, such as acrocyanosis, claudication and gangrene, are local evidences of a general disease. Developments in the treatment of occlusive vascular phenomena, whether spastic or obliterative in character, have followed many leads, some physiologic, others as by-products of increased knowledge of the sympathetic system. The author states that, believing that simple physiologic methods applicable to all extremities with ease offer hope of relief from pain and possibly the saving of limbs, he tried the method of passive vascular exercise. He found that it is by no means a cure-all; it does help and probably has prevented several amputations, favored healing of sluggish wounds, and in several instances made it possible for patients formerly crippled and incapacitated on account of pain to go back to their usual occupations. He asserts that vascular disturbances of the extremities are merely local manifestations of a general disease. When obliterative or organic disease of the vessels exists, local operation such as ganglionectomy does not offer more than relief of pain of a particular part. It cannot cure a disease in which the changes are to be found in every part of the vascular tree, as evidenced by the fact that many of the patients who die of Buerger's disease die with evidence of coronary disease. At necropsy this has been shown to be identical with the condition found in the extremities. If collateral circulation can be improved and pain relieved by methods that cause a dilatation of the peripheral vessels and thus help establish a collateral circulation to prevent gangrene, such methods should be used by preference over operations of considerable magnitude, the value of which has not been proved and which have been in use too short a time to show any ultimate results beyond the fact that some of them have resulted in failure. In the after-care of patients who by reason of an operation or an embolic process have had a sudden interference with circulation in an important trunk vessel the immediate value of a simple procedure such as passive vascular exercise is to be preferred to either ganglionectomy or blockage. The mechanical treatment for obtaining passive vascular exercise as suggested by Herrmann and Reid offers one of the most valuable contributions to the treatment of nutritional disturbances of vascular origin that have thus far been devised.

Artificial Pneumothorax in Treatment of Lobar Pneumonia.—Robbins believes that artificial pneumothorax is a therapeutic agent of great value in the symptomatic treatment of lobar pneumonia as revealed by the results obtained in five cases. The amelioration and the alleviation of symptoms were prompt and permanent. In one case the specific action of the procedure was evidenced by the induction of an artificial crisis. The small number of cases treated and the admission of the patients to the hospital rather late in the disease prevented the possibility of more proof concerning this feature of the treatment. It cannot be gainsaid that artificial pneumothorax is a therapeutic agent that appears to be a great boon to the physician in the treatment of lobar pneumonia. The author states that at present artificial pneumothorax must be considered as one, though a most important one, of the several agents employed to combat this disease. The use of this treatment in pneumonia necessitates the warning that, unless one is experienced in the use of artificial pneumothorax, it is better to refrain from its employment because of the dangers attendant on its use and the added dangers of damage to the pneumonic lung.

New York State Journal of Medicine, New York

35: 749-798 (Aug. 1) 1935

Thoracic Injuries. J. V. Bohrer, New York.—p. 749.
Significance of Laboratory Tests and Methods. R. G. Stillman, New York.—p. 757.
Septicemia Following Tonsillitis. C. Hirsch, New York.—p. 767.
Vitamin D Milk Control: Administrative Aspects. P. B. Brooks, Albany.—p. 776.
Favus in a Native School Child. Phyllis Schuyler Kerr, White Plains. —p. 781.

Oklahoma State Medical Assn. Journal, McAlester

28: 285-320 (Aug.) 1935

Present Status of Radiation Therapy. E. S. Lain and M. M. Roland, Oklahoma City.—p. 285.
Diagnosis and Treatment of Some Common Anorectal Diseases. F. B. Campbell, Kansas City, Mo.—p. 288.
Ulcer Serpens. K. G. Parks, Oklahoma City.—p. 291.
Report on Hysterectomies. F. A. Hudson, Enid.—p. 295.
Treatment of Acute Gonorrhea by the General Practitioner. J. W. Henry, Anadarko.—p. 300.
Laws of Interest to the Medical Profession. L. H. Ritzhaupt, Guthrie. —p. 304.

Philippine Journal of Science, Manila

56: 405-578 (April) 1935. Partial Index

Notes on Philippine Mosquitoes. I: The Armigeres Group. F. E. Baisas, Manila.—p. 485.

Public Health Reports, Washington, D. C.

50: 985-1016 (Aug. 2) 1935

Roentgenologic Appearances in Silicosis and Underlying Pathologic Lesions. Report by Committee Composed of H. K. Pancoast, E. P. Pendergrass, A. R. Riddell, A. J. Lanza, W. J. McConnell, R. R. Sayers, H. L. Sampson and L. U. Gardner.—p. 989.

Dedication and Opening of the Lexington Narcotic Farm. W. L. Treadway.—p. 996.

South Carolina Medical Assn. Journal, Greenville

31: 129-144 (July) 1935

Malignant Melanoma (Black Cancer). K. M. Lynch, Charleston.—p. 129.

Treatment of Fractured Skulls. C. O. Bates, Greenville.—p. 132.

Texas State Journal of Medicine, Fort Worth

31: 185-250 (July) 1935

Raw Apple Diet in Treatment of Diarrhea. S. R. Kaliski, San Antonio.—p. 191.

Fever Therapy. A. U. Desjardins, Rochester, Minn.—p. 194.

Use of Short Wave Therapy in Medicine. J. W. Torbett Jr., Marlin.—p. 200.

*Observations on Recent Epidemic of Diarrhea, with Bacteriologic Studies. C. O. Terrell and May Owen, Fort Worth.—p. 204.

Use of Sodium Lactate in Treatment of Acidosis. R. L. Moore, Dallas.—p. 206.

Combined Agglutination Tests and Blood Clot Culture in Diagnosis of Typhoid Fever. S. W. Bohls and V. T. Schuhardt, Austin.—p. 210.

Immunization with Pertussis Vaccine. B. Reading, Galveston.—p. 213.

Control and Prevention of Whooping Cough. D. Greer, Houston.—p. 215.

Control and Prevention of Acute Exanthemas. E. R. Cockerell, Abilene.—p. 218.

Diphtheria: Prevention and Control. C. E. Gilmore, Paris.—p. 221.

Communicable Diseases of Eyes of School Children and Their Prevention. F. P. Schuster, El Paso.—p. 225.

Cataract Surgery in India. W. S. Webb, Forth Worth.—p. 227.

Bacteriologic Studies of Epidemic of Diarrhea.—During September, October and November 1934 Terrell and Owen observed an epidemic of diarrhea affecting infants, children and adults in Fort Worth, Texas, and its surrounding territory. In Fort Worth alone the number of cases was well into the thousands, cases in infants and children predominating. Etiologic studies of the diarrhea epidemic were made by physicians in private practice, clinical laboratories and, to a certain extent, by the city health department. Water, milk and food supplies were carefully investigated. The diets of the infants had been varied, some being fed powdered milk and others evaporated milk; many had boiled cow's milk and a number were breast fed. Clinically the condition simulated Sonne's dysentery to such a degree that cultures of stools and agglutination tests of the blood for this condition, Hiss-Y, Duval, Shiga, Flexner dysentery and the typhoids were made in fourteen cases; all were negative. Almost all the cultures made from fresh stools showed a predominance of large gram-positive diplococci that were neither hemolytic nor green producing. These cultures were best obtained from the freshest stools. In a few instances the first transplants showed practically pure cultures of streptococci. Stools from thirty patients exhibited streptococci as the predominating organisms; sixteen of these were examined for fermentation. All the cultures fermented dextrose, lactose, maltose and sucrose, and all except one fermented mannite. The diplococcus in these cases differed from Bargen's diplococcus in that all the cultures except one fermented mannite. Cultures from twelve of the patients were given intravenously to rabbits (20 cc. of a twenty-four hour culture), seven of which showed lymphoid hyperplasia and hemorrhages in the mucosa of the colon, with superficial ulcerations similar to those seen in the intestine of the babies on whom necropsies were done. One of the experimental animals exhibited lymphoid hyperplasia and a congested intestinal mucosa, with a very large amount of mucus but no ulcerations; four exhibited no gross changes. Eight of the rabbits had bloody mucus in the stools. The colon of one rabbit was filled with clear, light yellow, jelly-like material. Cultures from the ulcers and intestinal contents showed gram-positive diplococci that had the same cultural characteristics as those isolated from the patients. The treatment of the patients in this epidemic consisted of isolation, as the diarrhea was probably transmitted by direct contact. For the dehydration, abundant fluids were given, consisting chiefly of Hartman's solution by hypodermoclysis, intraperitoneally and intravenously. The infants were given fat-free milk with a moderate amount of carbohydrates and increased proteins. The older children were given skimmed milk, bananas, banana powder and casec. Opiates were given only when the stools became too frequent. Enemas of physiologic solution of sodium chloride or sodium bicarbonate relieved the tenesmus and seemed to hasten recovery.

Yale Journal of Biology and Medicine, New Haven

7: 499-614 (July) 1935

Thomas Lodge, Doctor of Physick. N. B. Paradise, New Haven, Conn.—p. 499.

Pulmonic Endocarditis: Clinical and Pathologic Report of Three Cases. D. M. Grayzel, New Haven, Conn.—p. 515.

*Chronic Cystic Mastitis as Physiologic Aberration, and Its Significance in Diagnosis and Treatment of Tumors of the Breast. S. C. Harvey, New Haven, Conn.—p. 521.

Dysmenorrhea: Clinical Note. E. L. Stone, New Haven, Conn.—p. 533.

Bacteriophage Inhibition by Serum. M. L. Rakieten, G. Zalkan and T. L. Rakieten, New Haven, Conn.—p. 541.

Chronic Cystic Mastitis.—Harvey points out that there is a sharp line of demarcation between carcinoma and cystic mastitis. In the former the natural history of the disease is that of a malignant state, in the latter of benignity. The histologic picture of the benign lesion, particularly during the most active phase of physiologic hyperplasia, often gives the impression that the epithelium is about to plunge through the barrier of the membrana propria and establish an invasive focus of cancer. The histologist hesitates to call such a picture benign; an equivocal answer may be found in terming it "precancerous," in which case he is always right whatever the later course of the disease may disclose. Bloodgood has pointed out that, when the proliferating epithelium is not unquestionably and readily seen to be invasive, the lesion is benign. Therefore, a true malignant condition does not simulate benign disease, whereas many forms of benign disease may suggest histologically the malignant. The fallacies of the determination of the incidence of cancer in chronic cystic mastitis are twofold: one is the assumption that the diagnosis of microscopic cancer is valid, the other that the sampling of instances of this cystic disease is a fair one and therefore that the incidence of cancer is high. One cannot emphasize too strongly the difficulties of a differential diagnosis in a situation in which an error may be fatal. In the generalized disease without an individual tumor or definite localization, the chances of error are so small that operative attack is unjustifiable. But when there is a definite tumor or a localized area of disease, the error of diagnosis increases to the point at which actual examination of the excised tissue must be obtained. Hart has followed up a borderline group which is supposedly most malignant in potentiality; that is, the intracystic papillomas. It seems that about 20 per cent of this so-called borderline group are malignant and that the error of clinical diagnosis is less than 3 per cent for the group as a whole and about 10 per cent for the malignant component. It is unsafe to depend on a purely clinical diagnosis in such instances, and excision of the tumor or area in question, often involving a quadrant of the breast, or, when the involvement is greater, a conservative total mastectomy is necessary. When the clinical diagnosis of carcinoma is presumptive, the attack should be a radical mastectomy at once. The differential diagnosis and treatment of tumors of the breast rests on a concept of the so-called chronic cystic mastitis as an aberration of the cyclic changes in that organ associated with estrus; that is to say, it is a benign lesion. In the generalized form diagnosis is safe; but, in the types limited to certain areas in the breast or to a single tumor, exploration is necessary because the differential diagnosis from cancer cannot be made with sufficient security.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

British Journal of Anæsthesia, Manchester

12: 149-192 (July) 1935

Avertin: Analysis of Sixteen Hundred Administrations. F. E. Shipway.—p. 151.
Spinal Anesthesia. J. Sebrechts.—p. 176.

British Journal of Physical Medicine, London

10: 41-56 (July) 1935

Physical Methods in Treatment of Cardiovascular Disease. F. Bach.—p. 42.
Close Radiation of Carcinoma of Neck of Uterus by Body-Cavity Tube. W. Schaefer.—p. 46.
Fibrositis of Neck. E. Cyriax.—p. 49.
The "Fango" Method of Treatment in Rheumatism. D. D. Brown and A. Woodmansey.—p. 51.

British Journal of Surgery, Bristol

23: 1-240 (July) 1935

Carcinoma of Gallbladder. C. F. W. Illingworth.—p. 4.
*Operative Treatment of Fibrous Stricture of Rectum: Description of New Technic. J. P. Lockhart-Mummery and O. V. Lloyd-Davies.—p. 19.
Notochordal Tumor of Cauda Equina in Child of Eight Years. V. H. Ellis.—p. 25.
Carcinoid Tumor of Meckel's Diverticulum: Report of Case. I. Price.—p. 30.
Incisional Hernia. E. S. J. King.—p. 35.
*Posterior Segmental Block Excision of Bladder Neck with Primary Closure. S. H. Harris.—p. 45.
Hyperinsulinism Relieved by Partial Pancreatectomy: Case. J. A. Berry.—p. 51.
Congenital Dermoid Cysts and Sinuses of Limbs. M. J. Bennett-Jones.—p. 66.
Acromegaly. R. L. Knaggs.—p. 69.
Pseudomyelomatous Carcinomatosis. L. Cosin.—p. 110.
Omental Torsion with Unusual Symptoms. C. R. Salsbury.—p. 115.
Strangulated Internal Hernia: Report of Cases of Strangulation in Fossa Iliacosubfascialis and Through Foramen of Winslow. G. F. Langley.—p. 119.
Value of Urea Clearance Test in Urinary Surgery. E. W. Riches and J. D. Robertson.—p. 128.
Effect of Tracheal Occlusion on Hypertrophy of Thyroid Transplants and Remnants. E. W. Workman and G. G. Miller.—p. 141.
Cholecystography: Its Present Clinical Value. R. MeWhirter.—p. 155.
Unusual Tumor of Neck. R. E. Norrish.—p. 188.

Operative Treatment of Stricture of Rectum.—A case is presented in which a procedure was adopted that Lockhart-Mummery and Lloyd-Davies believe to be original and seems to offer an alternative to Hartmann's method of resecting the stricture. It gave a better result than could have been obtained by resection. It is not applicable in all cases of fibrous stricture of the rectum, as it is essential that free access should be obtainable to the whole of the strictured area. Since the operation does not involve opening the peritoneum, it is very much safer than a resection operation. The patient was given a low spinal anesthetic and then placed in the Sims position. The rectum was thoroughly washed out with a weak antiseptic solution and an incision was made in the midline posteriorly, extending from a point over the lower part of the sacrum to a point just behind the anal orifice. The coccyx was removed and the postrectal fascia divided. The rectum was then freely mobilized by stripping it from the pelvic wall on each side. In this way it was possible to draw down into the wound that part of the rectum containing the stricture. A considerable amount of dense fibrous tissue had to be divided before the actual rectal wall could be exposed, and the stricture was then divided longitudinally into the rectum, the incision extending into healthy intestine both above and below the narrowed portion. Tissue forceps were placed on the edge of the rectal wound on each side in the middle of the longitudinal incision and the rectum was drawn open. A large rubber tube was next passed into the rectum through the anus, the upper end passing well above the strictured area. The incision in the rectum was closed transversely by interrupted catgut sutures, with the knots on the mucous side, and covered by a second line of Lembert sutures. The fascia was stitched over the line of suture and the skin was closed, a small drain being placed in the upper part of the wound. The drainage tube in the wound was removed in twenty-four hours and the rectal tube in four days. Satisfactory healing took place except for a small sinus, which healed in a few weeks. On examination of the rectum no sign of stricture was present. A year has elapsed since the closure of the colostomy, and the patient's bowels open normally and regularly every day and there is no sign of the original stricture.

Posterior Segmental Block Excision of the Neck of the Bladder.—Harris presents the operation of posterior segmental block excision of the neck of the bladder with primary closure in the belief that it is an improvement on the well recognized operations of cuneiform (or wedge) resection and of complete extirpation of the neck of the bladder. The operation has been carried out in thirty-three cases without mortality. After the base of the bladder is exposed by the same technic as the author employs for prostatectomy, the tip of the right forefinger is gradually but firmly insinuated through the internal meatus. Two fingers of the left hand are passed into the rectum and provide an invaluable point of counterpressure during this maneuver. Two deep traction sutures are placed in position, one on each side about half way round the dilated prostatic rim. Following this, at least three-fourths inch of the hindmost sector is excised. In order to carry out this excision two deep parallel vertical incisions are made, one on each side of the midline and reaching down to the level of the floor of the prostatic urethra. The intervening lip is then firmly drawn up by traction forceps and cut out deeply and cleanly in a transverse direction by sharp scissors. The bared base must be carefully examined and, if need be, trimmed up. It is important that no gross fibrous or adenomatous remnants be left at this site. The crosscut ends of the prostatic rim are next freely undercut on each side to permit of their complete retraction. Two deep hemostatic sutures are then passed on each side behind the two traction sutures that were inserted prior to the excision. These sutures also serve to turn in on each side the bared face of the crosscut ends, thus eliminating the raw surface. When hemostasis has been accomplished, retrigonization is carried out and completes the plastic portion of the operation. The anterior obliterative sutures employed after suprapubic prostatectomy are not required for this operation, as the anterior segment of the neck of the bladder has not been interfered with and there is no raw surface left to obliterate. A number 22 French rubber catheter is passed through the urethra into the bladder, and its end, including the eye, is cut off after an opening has been cut about 1 inch behind the eye. The catheter is suspended in position by a silkworm intestinal suture. The bladder and abdominal wounds are completely closed and the silkworm intestinal suture is suspended to a small glass rod on the abdomen according to the author's practice after prostatectomy. The after-treatment is the same as that employed after prostatectomy.

British Medical Journal, London

2: 147-194 (July 27) 1935

Family Tuberculosis Due to Bovine Tubercle Bacilli. A. S. Griffith and W. T. Munro.—p. 147.
The Acute Hemolytic Anemia of Lederer. H. Joules and L. M. Masterman.—p. 150.
*Histidine Treatment of Peptic Ulcer of Lesser Curvature: Note on Twelve Cases. D. Smith.—p. 154.
Closed Methods of Anesthesia in Surgery of Chest: Note. J. Halton.—p. 159.
Localized Nonsuppurative Encephalitis of Otitic Origin. J. B. Horgan.—p. 161.

Histidine Treatment of Peptic Ulcer of Lesser Curvature.—Smith employed the histidine treatment of peptic ulcer in twelve cases that fulfilled certain criteria: (1) a history suggestive of gastric ulcer, (2) the exclusion of cases obviously surgical and (3) unequivocal roentgen evidence of ulcer of the lesser curvature. Ordinary diet was permitted without restriction. Daily injections of 5 cc. of a 4 per cent solution of histidine were given. No other form of treatment was used. Of the twelve cases, seven were treated in the wards in order to study them more carefully, and five were treated as ambulatory cases in private. The hospital patients were allowed to be up, and they assisted in various ward duties. Four private patients continued their ordinary occupations, and one was up and about but not at his work. The first symptom to disap-

pear was discomfort. This refers to the vague feelings of fulness, soreness, nausea and tastes in the mouth. Vomiting was almost immediately controlled, and before long pain ceased to be a disturbing factor. Loss of appetite was not a common complaint, but, when present, there was a speedy return of a desire for food. The patients soon had a better color, and their weight increased each week. In no case was there a failure to gain substantially in weight. In cases in which there had been gastric retention due to pylorospasm the emptying time improved. The better function was also seen in the relief from constipation. Definite flatulence was the most obstinate subjective symptom. In two cases, in which it persisted throughout the whole course of injections, it was completely relieved by the daily administration of two tablets each containing one-fifth grain (0.013 Gm.) of histidine. Tenderness on palpation was present in all cases until several injections had been given, but the most refractory yielded after the twentieth dose. Striking roentgen improvement was observed.

Guy's Hospital Reports, London

85: 129-248 (April) 1935

William Henry Trethowan: I. Some Personal Impressions. J. J. Conybeare.—p. 131.
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Criterion for Treatment of Asthma. E. T. Conybeare and L. J. Witts.—p. 138.
Delayed Chloroform Poisoning in Obstetric Practice: Clinical Study, Reports on Three Cases. G. F. Gibberd.—p. 142.
Cirrhosis of Liver with Ascites Due to Novarsenobenzol: Case. J. R. Forbes.—p. 161.
Leuko-Erythroblastic Anemia, with Account of Four Cases. I. G. Robin.—p. 163.
*Monocytic Leukemia: Case. W. N. Mann.—p. 178.
Treatment of Auricular Fibrillation with Strophanthin Emini. D. E. Bedford, M. Campbell and P. H. Wood.—p. 185.
Hyperpiesia with Cerebral Crises: Two Cases: I. Hyperpiesia with Amaurosis. A. M. G. Campbell.—p. 191.
Id.: II. Fatal Cerebral Crisis from Hyperpiesia in a Girl of Twenty-one. D. A. Davies.—p. 193.
Diabetic Coma Associated with Transitory Polycythemia: Case. P. C. Alexander.—p. 195.
Achalasia of Cardia Associated with Chronic Gastric Ulcer: Two Cases. H. J. Starling.—p. 197.
Achalasia of Cardia with Severe Pressure Symptoms: I. Achalasia of Cardia with Pressure Symptoms Relieved by Antispasmodic Drugs: Two Cases. H. J. Starling.—p. 201.
Id.: II. Achalasia of Cardia with Pressure Symptoms and S-Shaped Distortion of Lower End of Dilated Esophagus. F. E. Camps.—p. 203.
Severe Melena from Polyp of Meckel's Diverticulum. H. J. Starling.—p. 207.
Portable Thermo-Electric Couple for Measuring Skin Temperature. R. T. Grant.—p. 209.
Hysterical Tetanus. J. J. Conybeare.—p. 212.
*Headache as Feature of Ménière Symptom Complex. L. H. Cohen.—p. 215.
Cerebellar Hemorrhage: Case. R. H. Blazeby.—p. 225.
Observations on Erythema Nodosum and Erythema Induratum. G. P. A. Whitwell.—p. 227.
Myelolipoma (Bone Marrow Heterotopia) of Suprarenal Gland: Case. S. De Navasquez.—p. 237.
Report on Treatment by Radium at Guy's Hospital, 1930-1933: I. Surgical Cases. P. Reading.—p. 241.

Monocytic Leukemia.—Mann describes a case of monocytic leukemia with an account of the necropsy and microscopic examination of the tissues, and he analyzes fourteen such cases. The history of monocytic leukemia may be divided into two phases. The first, lasting a few months, is marked by infection, progressive pallor and lassitude. The second, the beginning of which is often marked by ulceration of the gums and in which a stomatitis is almost invariable, consists of a rapid deterioration of the patient, often with further necrosis in the mouth. The spleen and liver are palpable in about half the cases, but the enlargement is rarely extreme. Enlarged lymph nodes other than those draining the infected area in the mouth are present only in less than half the cases. The second phase is associated as a rule with a rapid increase in the number of circulating white cells, a high proportion of which are mature monocytes. The case described is evidently a typical case of monocytic leukemia of the acute variety. The first subacute phase of progressive weakness and increased pallor lasted about five weeks and was followed by an acute terminal illness of a duration of six days. Blood counts showed typical mature as well as immature monocytes, while the postmortem examination revealed leukemic infiltration in many organs, with reticular hyperplasia in the spleen and lymph nodes.

Headache as a Feature of Ménière Symptom Complex.—Cohen reports eleven cases in which the picture of the Ménière symptom complex was present, with particular reference to headache. The nature of the headache did not appear to be characteristic, since it was variously described as sharp, dull, continuous, intermittent, throbbing, stationary or radiating. Its localization, however, seemed characteristically to be in the sagittal plane of the head (frontal, vertical, occipital or radiating in this plane). Headache is a more common feature of the Ménière symptom complex than tinnitus and should for this reason be more generally recognized as important in the diagnosis of the condition. The data of the cases bear more specifically on the neurologic aspects of the disorder. Of the eleven cases, in seven there were positive family histories for organic nervous system disease in the immediate line; in nine cases there were neurologic signs other than those referable to disease of the middle ear. It would appear, therefore, that an organic neurologic basis for this disorder is primary. It does not necessarily follow that the headache found in the Ménière symptom complex is also primarily neurologically conditioned, since it may arise in association with circulatory changes. On the other hand, the fact that in seven of the cases headache was present from the beginning of the symptomatic stage, if not before, argues for a common origin of this symptom with the others (vertigo, tinnitus, deafness). The fact that the headache was localized would argue against circulatory dysfunction as its primary cause. The sagittal headache is localized in and/or over the surface projection of the falx cerebri and the tentorium cerebelli. These anatomic structures are formed by a reduplication of dura mater. Why headache has this localization in this condition, the author states, cannot be accounted for on the basis of his data.

Japanese Journal of Experimental Medicine, Tokyo

13: 275-356 (June 20) 1935

Studies on Mitochondria and Metachondria of Gland Cell of Pancreas. I. Suzuki.—p. 285.
*Experimental Serotherapy of Smallpox. H. Yaoi.—p. 307.
Microdosage of Formol. S. Ohyama.—p. 327.
Studies on Virus of Lymphogranuloma Inguinale Nicolas, Favre and Durand. Y. Miyagawa, T. Mitamura, H. Yaoi, N. Ishii and J. Okanishi.—p. 331.
Studies on Etiology of Scarlet Fever. A. Imamura, H. Ono, T. Endo and I Kawamura.—p. 341.

Experimental Serotherapy of Smallpox.—Yaoi obtained an active antiviral serum by repeated subcutaneous inoculation into the goat of the purified vaccinia virus; the inoculations were made with successively increasing amounts of vaccinia virus over a period of from three to seven months, with an interval of five days. Provided the amount of the purified vaccinia virus inoculated into the marginal vein of the ear of rabbits (weighing 1,000 Gm.) was sufficient to produce a generalized skin lesion, a generalized vaccinia occurred on the fourth or fifth day, but in case of animals weighing about 2,000 Gm. the occurrence of generalized vaccinia was postponed until the seventh day. In animals thus inoculated with the vaccinia virus, if later treated with the antivaccinial serums either intravenously or intramuscularly, the appearance of eruptions is completely or strongly inhibited. The effect of the serum appears not in the least different according to the divergent periods of its administration; i. e., from one to seventy-two hours after the infecting inoculation. Monkeys (Macacus fuscatus and rhesus) inoculated with a strain of variola virus by the intravenous route develop a generalized lesion five days later. The appearance of the eruption resembles human smallpox. The eruption proceeds to papule, vesicle and pustule, further scab formation and its falling off, and scars remain at least until the twenty-seventh day, as depilated white spots. In a monkey thus previously infected with a variola virus, if injected with the antiviral serums intramuscularly while it is developing papules or vesicules, the eruptions are so influenced as never to proceed beyond the pustule stage, and quick drying and falling off of scabs set in and the eruption clears up completely. The quick disappearance of disease symptoms, recovery of the well being and appetite and an increase in body weight are evident.

Presse Médicale, Paris

43: 1081-1104 (July 6) 1935

*Paralysis of Vasomotor System by Volatile Industrial Solvents. L. Dautrebande.—p. 1081.
Distribution and Evolution of Vitamin C in Body. A. Giroud and C.-P. Leblond.—p. 1085.

Vasomotor System and Industrial Solvents.—Dautrebande discusses the mode of action of the volatile industrial solvents, such as benzene, petroleum ether, amyl acetate and cellulose varnish. Most of his observations were made on anesthetized dogs. He concluded that the volatile solvents possess the property of paralyzing the vasomotor system and that this intoxication is rapid like detoxification. The action does not affect the centers but bears on the periphery and especially the smooth muscle of the vessels. Both in the intact animal and in isolated organ preparations reversibility of the effect is dependent on the duration of action of the poison. In general, if the intoxication by benzene does not exceed two minutes, the isolated organ renews its spontaneous contractions if placed in pure Ringer's solution. If longer than three minutes, this does not occur. This paralyzing action at the level of the muscle itself affects all the muscles approximately equally.

43: 1105-1120 (July 10) 1935

*Degenerative Lesions of Liver and Insulin Resistant Diabetic Coma. M. Labbé, R. Boulin and Balmus.—p. 1105.
Intoxication by Polypeptides. P. Cristol.—p. 1107.

Lesions of Liver and Diabetic Coma.—Labbé and his co-workers report observations of the liver in four fatal cases of diabetic coma. In all instances the patients were in complete coma with abolition of reflexes. The urine regularly showed glycosuria and diacetic or beta-oxybutyric acids. The blood constantly presented a low alkali reserve. In spite of strong doses of insulin, the patients all died the same day or the next. In all cases glycosuria persisted throughout. Three of the patients showed symptoms of cardiac collapse. Renal lesions involving principally the glomeruli, largely old and usually slight, were found. The liver changes were more important and consisted in increase in volume of the organ, which weighed from 1,950 to 3,400 Gm., disappearance of the lobular structure and changes in the cells involving fatty infiltration in two cases and spongy aspect in the other two, the nuclei being often absent or poorly colored. The authors believe, therefore, that there is thus a fourth type of hepatic lesion in diabetes. It is possible, though not confirmed, that renal and hepatic insufficiency constitute important factors in insulin resistance and are accountable for part of the mortality from diabetic coma.

43: 1137-1152 (July 17) 1935

*Staphylococcus Anatoxin and Its Use in Specific Treatment of Certain Staphylococcic Disorders. G. Ramon, A. Bocage, R. Richou and P. Mercier.—p. 1137.
*Vaccinotherapy by Staphylococcus Anatoxin. P. Nélis.—p. 1141.

Staphylococcus Anatoxin.—Ramon and his collaborators report the results of treating certain local staphylococcic infections with toxoid. The toxin was obtained by growing the staphylococci in a semisolid medium composed of bouillon and gelose. This medium, with or without sugar, is inoculated with a toxigenic strain. A gaseous current consisting of 80 per cent air and 20 per cent carbon dioxide is passed over the culture. After five days of incubation at 37 C. it is filtered, the filtrate containing the toxin. The antigenic power of the toxin can be tested in vitro. To this bouillon, formol is added (4 cc. per liter) and left in the drying oven at 39 or 40 C. for two weeks. The important properties to determine are the innocuousness and the intrinsic antigenic power. The latter is expressed in antigenic units of flocculation. The patients were treated first with injections of diluted and later of the undiluted toxoid. In the majority of instances both were well tolerated. Local reactions were commonly slight and transitory. General symptoms occurred less commonly but were not severe. Focal reactions were rare. The therapeutic effect was encouraging from the beginning. Forty-two patients having obstinate furunculosis were treated and thirty-seven recovered. Of twenty-two having simple chronic furunculosis and of seventeen having incidental furunculosis, all recovered. Nineteen patients of twenty-three having pustular acne recovered. Six patients with sweat follicle infections and perionyxis recovered. The authors conclude that the results are satisfying.

Vaccinotherapy by Staphylococcus Toxoid.—Nélis discusses the use of toxoid in various staphylococcic infections. His results especially in furunculosis were usually good and he believes that this method of vaccinotherapy is superior to all other methods of treatment heretofore employed in local staphylococcic disorders.

Giornale di Clinica Medica, Parma

16: 1117-1230 (Aug. 10) 1935. Partial Index

*Trimethylamine in Urine in Normal and in Certain Pathologic Conditions. G. Monasterio.—p. 1117.
Intravenous Injections of Insulin: Clinical and Experimental Study. A. Guarino and M. Stellatelli.—p. 1132.
Hemotherapy: Morphologic Picture of Blood. L. Gipperich.—p. 1156.
Functions of Heart and Electrocardiogram After Effort in Bronchial Asthma. E. Castellani and Lina Gozzi.—p. 1175.
Mediastinal Hernia: Cases. G. Reggiani.—p. 1201.

Trimethylamine in Urine.—Monasterio made determinations of the contents of trimethylamine in urine in normal and in certain pathologic conditions and concludes that trimethylamine is a constituent of urine that under normal conditions varies between 0.0009 and 0.00303 Gm. per hundred cubic centimeters of urine and between 0.00108 and 0.003412 Gm. in the total amount of urine eliminated during twenty-four hours. Trimethylamine is a product of the metabolism of certain phosphatides and betaines. Its origin in the putrefaction of lecithins, choline and certain food proteins in the large intestine is scanty. Probably synthetic processes of the substances, on the one hand, and oxidative or hydrolytic processes, on the other, are involved in the production of urinary trimethylamine. There is no parallelism between trimethylaminuria and indicanuria. The elimination of urinary trimethylamine increases in normal conditions after abundant ingestion of either meat or lecithins and in pathologic conditions that stimulate the catabolism of the phospholipins and body proteins, such as diseases of the nervous system, diabetes and cachectic diseases. Its increase in diseases of the liver is explained by the fact that the defective functions of the organ result in insufficient catabolism and the use of the amines in the processes of synthetization of choline and lecithins.

Klinische Wochenschrift, Berlin

14: 1129-1160 (Aug. 10) 1935. Partial Index

Studies on Action of Resuscitation Measures in Experimental Asphyxia. S. Koeppen.—p. 1131.
*Occurrence of Variants of Spirochaeta Icterohaemorrhagiae (Spirochete of Weil's Disease). H. Schlossberger, J. Grillo and L. Scheele.—p. 1133.
Carbohydrate Metabolism of Warm Blooded Animals During Muscular Exertion. E. Jokl.—p. 1139.
*Behavior of Amount of Bile Pigment in Blood in Intensive Muscular Exertion. L. Stanojević and Sava Petrović.—p. 1146.

Variants of Spirochaeta Icterohaemorrhagiae.—In the examination of numerous serums from patients with infectious jaundice for the presence of agglutinins and lysins for Spirochaeta icterohaemorrhagiae, Schlossberger and his associates were able to corroborate the observations of Baermann and Zuelzer; namely, that the majority of serums react with various strains of Spirochaeta icterohaemorrhagiae but that there are some serums that in the agglutination and lysis experiments give positive results only with a few of the strains, occasionally only with one. Repeated tests on the serum of the same patient (withdrawn at different times) occasionally reveal an increase in the number of strains that can be influenced in the agglutination and lysis tests. The agglutination and lysis experiments indicate that, in examining serums from patients in whom an infectious jaundice is suspected, it is necessary to test a larger number of different strains of Spirochaeta icterohaemorrhagiae in order to obtain reliable results. Moreover, the results of the experiments correspond with the observation that the potent monovalent antiserums against infectious jaundice which are obtained by the immunization of rabbits influence many but not all the strains of Spirochaeta icterohaemorrhagiae. On the basis of these observations, as well as of prophylactic experiments with monovalent antiserums (passive immunity) and of active immunization experiments with monovalent iodine and formal-

dehyde vaccines, it may be assumed that the spirochetes of Weil's disease cannot be differentiated into sharply defined types, but rather that the antigen apparatus of the various strains is probably composed of different partial antigens and that the distribution of these partial antigens differs in the various strains. The authors conclude that in the serotherapy of infectious jaundice only the polyvalent immune serums give any prospect of therapeutic efficacy.

Bile Pigment in Blood in Muscular Exertion.—Stanojević and Petrović state that it is generally assumed that under physiologic conditions the spleen is the source of the bilirubin that appears in the blood. For this reason, some investigators succeeded in producing an increase in the bilirubin content of the blood by causing contraction of the spleen by means of epinephrine injections. Since muscular exertion leads to contraction of the spleen, the authors decided to investigate the behavior of the bilirubin content of the blood during and after muscular exertion. Their studies were made on healthy young men who were not accustomed to intense muscular exertion. The bilirubin was determined according to the method of Hijmans van den Bergh by means of Autenrieth's colorimeter. Specimens of blood were withdrawn before, during and after muscular exertion. It was found that intense muscular exertion increases the bilirubin content of the blood by from 20 to 45 per cent. The increase becomes noticeable within the first few minutes of the exertion and reaches its maximum at the end. During the rest period the bilirubinemia decreases gradually, but in the majority of cases it does not entirely return to its initial value even after a prolonged rest. If the muscular exertion is resumed, the bilirubin content increases again, but it is now less than during the first exertion. The experiments indicated that the intensity and the duration of the exertion influence the increase in the bilirubin content.

Medizinische Klinik, Berlin

31: 997-1028 (Aug. 2) 1935. Partial Index

Surgery of Liver and of Extrahepatic Bile Passages. P. Walzel.—p. 997.
Prevention of Communicable Disease in Children's Institutes. E. Slawik.—p. 1005.
Diagnostic Mistakes in Bone Tumors. V. Lieblein.—p. 1008.
Therapeutic Use of Phenol as Caustic in Dermatology. C. L. Karrenberg.—p. 1010.
*Case of Rumination. Lotte Sylla.—p. 1011.
*New Method for Testing Pectoral Fremitus. D. Sučić.—p. 1012.

Rumination.—In the case reported by Sylla a woman, aged 26, complains that about twenty minutes after a meal her food comes up again. She chews it again and then swallows it, but some of the food is extremely bitter and is expelled by the patient. Particularly after sweet foods she has an unpleasant feeling of pressure in the region of the stomach. She has had this disorder since her twelfth year and for several years has had recurrent attacks of severe gastric spasms. The roentgenologic examination disclosed an enlarged stomach, which after filling showed a peristaltic wave in the upper portion, from which retroperistaltic, ascending waves could be observed. The raising of the food was effected by the action of the abdominal muscular pressure, by the action of the diaphragm, by retroperistaltic waves and by the opening of the cardia following eructation of air. The patient's condition could be improved by gastric lavage and by giving small quantities of food at short intervals. In this case the disorder was apparently a combination of aerophagia and rumination. The cause of rumination is not fully understood. The older writers consider some cases hereditary and others the result of a neuropathic constitution. In the reported case there were indications for neither of these origins.

New Method for Testing Pectoral Fremitus.—Sučić shows that pectoral fremitus, together with bronchial respiration and bronchophony, make up the triad of symptoms by means of which an abnormal sound permeability of the pulmonary parenchyma can be detected. To be sure, bronchial respiration is the most important of the three in the recognition of infiltrative processes in the pulmonary parenchyma, but, although bronchophonia and pectoral fremitus have, as a rule, only confirmative value in connection with the results of the bronchial respiration, there are some cases in which they furnish the most important auscultatory signs. The author discusses the sound mechanism of pectoral fremitus and shows that, when, as is usually the case, pectoral fremitus is elicited by letting the patient speak loudly, it is essential that the vocal cords function properly. However, in patients with aphonia, such as those who have a laryngeal stenosis or who have undergone a laryngectomy or a tracheotomy, it is impossible to elicit the pectoral fremitus by letting the patient speak loudly. The author found that hawking or coughing will produce a clear pectoral fremitus. He found that in patients with normal vocal cords hawking is more effective, while in patients with aphonia, particularly in those who have undergone tracheotomy or laryngectomy, better results can be obtained by urging the patient to cough. The author illustrates this with several case reports and explains the mechanism that is involved when pectoral fremitus is elicited by hawking or coughing.

Monatsschrift f. Geburtshülfe u. Gynäkologie, Berlin

99: 321-380 (July) 1935

*Hypophyseal Disturbances Following Pregnancy and Delivery. L. Seitz.—p. 321.
Premature and Early Rupture of Bag of Waters, Its Pathogenesis and Therapy. E. W. Winter.—p. 332.
Dermographism During Period of Gestation. H. Eufinger and H. Krupp.—p. 343.
Unilateral Krukenberg Tumor. H.-G. Müller.—p. 348.
Pathologic and Clinical Aspects of Heterotopic Endometrioid Proliferations. M. Karlin and Alexandra Osjakina.—p. 353.

Hypophyseal Disturbances Following Pregnancy.—Seitz mentions factors that indicate the dominating position of the hypophysis among the endocrine glands and in the metabolic processes, and as an explanation he cites the fact that through the infundibulum the hypophysis is in direct connection with the diencephalon, the site of the sympathetic centers. Considering the great changes that take place in the organism during pregnancy, it is not surprising that the hypophysis is to a great extent involved in these changes. It has been determined that the hypophysis becomes considerably enlarged during pregnancy. This hypertrophy involves chiefly the anterior lobe and especially the main cells, whereas the acidophils and the basophils are not increased. For this reason the main cells have been referred to as pregnancy cells. The author gives his attention to changes and disturbances that occur during pregnancy and after delivery the symptomatology of which indicates a connection with irregularities in the hypophyseal function. He points out that an abnormal function of the hypophysis may become manifest during pregnancy in that the woman's hands, feet, nose and chin become enlarged. Mild forms of this acromegaly of pregnancy and even a severe form are occasionally observed. The author noticed a considerable number of women who had polydipsia and polyuria during their pregnancy, and he describes one case in which acromegaly and diabetes insipidus concurred during pregnancy. He discusses hypophyseal disturbances that develop after delivery. He calls attention to the so-called lactation atrophy of the uterus and expresses the opinion that lactation is only a contributing cause and that the hypophysis plays an important part in this phenomenon. He thinks that a severe hyperinvolution and atrophy of the uterus after delivery is the first and mildest manifestation of an excessive involution of the hypophysis. Then he gives his attention to the hypophyseal obesity that occasionally develops after delivery. This condition is usually accompanied by oligomenorrhea or by amenorrhea, and the author considers it the result of an excessive involution of the hypophysis. This assumption is corroborated by the fact that hypophyseal preparations exert a favorable influence on this condition. Estrogenic substance also seems to have a favorable effect; however, its effect is not as satisfactory as that of the hypophyseal preparations. Another disorder that may result from a hyperinvolution of the hypophysis is emaciation. The author concedes that it may appear contradictory to ascribe obesity and emaciation to the same cause, but he asserts that the contradiction is only apparent, there being only a difference in the degree of the hypophyseal changes. The hypophyseal emaciation that develops after delivery is really a mild, abortive form of Simmonds' disease. The author describes a case history in which ovarian

preparations proved ineffective but the administration of hypophyseal preparations was followed by the disappearance of the symptoms. Whereas the aforementioned conditions were caused by a hypofunction of the hypophysis as the result of hyperinvolution, there are also cases in which disturbances result from a retarded or insufficient involution of the hypophysis. In this connection the author mentions certain cases of subinvolution of the uterus with hemorrhages. In such cases curettage is usually effective.

Monatsschrift für Kinderheilkunde, Berlin

63: 161-240 (July 20) 1935

*Aspects of Heerfordt's Syndrome (Uveoparotid Fever). M. Haferkorn.—p. 161.
Aspects of Pneumococcic Meningitis During Childhood. P. Bode.—p. 165.
Symptomatology of Essential Hypertension During Childhood. Leonore Liebenam.—p. 171.
*Articular Manifestations in Infantile Leukemia. B. Fuchs.—p. 185.
Studies on Diameter of Erythrocytes During Childhood. H. Fischer.—p. 194.
Circumscribed Pulmonary Emphysema in Tuberculosis of Lymph Nodes at Root of the Lung. Min-Shu Chao.—p. 205.
*Is Rickets in Spasmophilic Children with Tetany Always in Same Roentgenologically Demonstrable Stage? E. E. Joepchen.—p. 217.

Aspects of Heerfordt's Syndrome (Uveoparotid Fever).—Haferkorn points out that Heerfordt's syndrome, in which fever, iridocyclitis and parotitis are the most noteworthy symptoms, occurs mostly in children and young persons. He describes a case of his own observation. In a boy, aged 13, there developed in rapid succession paralysis of the three branches of the facial nerve, swelling of the parotid gland and iridocyclitis. The patient also had polydipsia and polyuria. The author thinks that the polydipsia was the result of a deficient secretion of the parotid gland, for the existence of diabetes insipidus could be excluded because of the inefficacy of the hypophyseal preparations and on the basis of the sodium chloride tolerance test. The swellings of the parotid gland and of the bronchial lymph nodes yielded to roentgen therapy. In discussing the etiology of the uveoparotid gland, the author points out that Heerfordt assumed an infectious-toxic origin and rejected a connection with mumps. However, several other investigators gave consideration to the problem of chronic mumps, for in a number of cases, the reported case included, an attack of mumps preceded the development of Heerfordt's syndrome. Other authors assume a connection with tuberculosis. In the few cases in which a histologic examination of the eyes was done, the diagnosis of tuberculosis could be corroborated. In the author's case, roentgenologic examination of the lung revealed signs indicative of tuberculosis of the bronchial lymph nodes. Moreover, a calcified tuberculous focus was found in the abdomen and an excised piece of the parotid gland showed, on histologic examination, caseous granulation tissue, which doubtless was of tuberculous character.

Articular Manifestations in Infantile Leukemia.—Fuchs shows that the diagnosis of leukemia is difficult during childhood because during early childhood there is a physiologic lymphocytosis. Then there is a certain type of obese children in whom the spleen is palpable and who retain a lymphocytosis longer than is normally the case. Moreover, children occasionally have a tendency to respond to an infection with a lymphatic reaction. These factors show that in children the differential blood count may meet considerable difficulties when the possibility of a lymphatic leukemia has to be decided. The author relates the history of a girl, aged 3. The involvement of the joints made the diagnosis still more difficult. He describes another case with articular involvement. In this child there existed a lymphatic leukemia, the most noteworthy symptoms of which were severe pains in the joints, fever and inflammatory swelling of some of the joints. In view of these symptoms, articular rheumatism was first thought of. However, when swelling of the lymph nodes developed, a blood disease was suspected and the disorder was diagnosed as leukemia. In both cases areas of lesser density were noticeable in the bones, and the author considers these as characteristic for leukemia. Both children died, but, since necropsy was done in neither of them, there is no definite proof of the leukemic nature of the bone disorder. However, on the basis of reports of other investigators, the author concludes that these bone changes were the result of a destruction of the normal bone structure by proliferating leukemic tissues. He thinks that the pains in the joints were likewise the result of leukemic proliferations in the juxta-articular portions of the bone. He reviews the literature on cases of leukemia that presented the aspects of febrile articular rheumatism and discusses the differential diagnosis, pointing out that, although osteitis fibrosa and Gaucher's disease may present similar roentgenologic aspects, their clinical aspects differ from that of leukemia. He concedes that the differentiation from acute articular rheumatism and from Still's disease may present considerable difficulties.

Relations Between Rickets and Tetany.—Joepchen calls attention to the fact that studies by Rominger and his associates disclosed that, as the cure of rickets begins, larger quantities of phosphorus are retained, while the calcium retention is still insufficient. Thus the blood presents at this time the typical distribution of minerals that is found in tetany, and Rominger concluded from this that the tetany of children develops on the basis of rickets and is an accompanying symptom of a beginning cure of the metabolic disturbance of rickets; that tetany is, so to speak, the curative crisis of rickets. Gerstenberger maintained that an interruption of the antirachitic treatment leads to tetany. At any rate, he too thought that improvement in the rachitic bone process is demonstrable when tetany develops. The theories of both these investigators were corroborated by the observation of Huldschinsky and others, who, in the roentgenogram of the rachitic child with tetany, noticed calcium deposits in the preparatory calcification zone. However, since these authors had studied only a small material, the author decided to verify the observations on a larger material. All children with tetany who came to his clinic were subjected to careful roentgenologic control. He examined thirty children with tetany and made comparative studies on thirty children who had rickets but were free from spasmophilic manifestations. He observed the presence as well as the absence of calcium lines in children who had only rickets and in children who had rickets and spasmophilia. He was unable to detect a characteristic roentgenogram in children in whom rickets was combined with spasmophilia and considers it unjustifiable to accept the roentgenograms that show a calcium line as indicative of a curative phase of rickets. He thinks that this calcium line may also be the manifestation of incompletely developed rickets. He concludes that there is no roentgenologic proof that spasmophilia is a curative crisis of rickets.

Münchener medizinische Wochenschrift, Munich

82: 1225-1266 (Aug. 2) 1935. Partial Index

Constitution and Formation of Urinary Calculi. G. B. Gruber.—p. 1225.
Criticism of Treatment and Prognosis of Poliomyelitis in Children. H. Mai.—p. 1228.
Gymnastic After Treatment of Poliomyelitis in Children. K. Bragard.—p. 1231.
*Bronchial Cancer of Smokers. F. Lickint.—p. 1232.
Hyperchronic Anemia as Result of Subacute Liver Dystrophy. H. Schoenemann.—p. 1235.
Ptosis of Stomach. Sutter.—p. 1236.

Bronchial Cancer of Smokers.—Lickint cites reports which indicate that carcinoma of the organs which are within the so-called smoke tract (lips, oral cavity, larynx and so on) are more frequent in smokers than in nonsmokers. Then he gives his attention to bronchial carcinoma. He shows that in some smokers the bronchi are within the so-called smoke tract and that, as the habit of inhaling the smoke increases, the incidence of bronchial tumors increases likewise. He admits that bronchial carcinoma occurs also in nonsmokers and he recognizes that this indicates the existence of cancerigenous factors other than tobacco. Moreover, he concedes that not all bronchial carcinomas which develop in smokers are necessarily caused by tobacco, but he believes that tobacco is the chief cause in the majority of cases. In many cases the effect of tobacco probably concurs with other cancerigenous factors. The author reaches the conclusion that it cannot be doubted that tobacco smoke plays a part in the etiology of bronchial cancer and he thinks that the inhalation of tobacco smoke should be discouraged. Moreover, in persons whose family history seems to indicate a predisposition to cancer, smoking as such should be advised against.

82: 1267-1306 (Aug. 9) 1935. Partial Index

Sterility and Its Treatment by Gynecologist. H. Eymer.—p. 1267.
Anatomic Observations After Death from Hanging. K. Walcher.—p. 1273.
*Essential Acetonemia of Children. H. J. Spörl.—p. 1275.
Geophagia of Primitive Peoples and Therapeutic Action of Earths. L. Wacker.—p. 1279.
Hereditary Transmission and Treatment of Hemophilia. C. H. Schröder.—p. 1281.
Pectin Derivative as Hemostatic and Contribution to Treatment of Ulcerative Colitis. H. Kochs.—p. 1284.

Essential Acetonemia of Children.—According to Spörl, acetonemic conditions are relatively frequent during childhood. Aside from the symptomatic forms of acetonemia that appear in the course of many infectious diseases, during starvation, in diabetic acidosis and in other conditions, there is the essential form; namely, the periodic or cyclic vomiting with acetonemia. In the latter condition, attacks of uncontrollable vomiting occur after intercurrent periods of complete health. These attacks appear suddenly or are preceded by several days of indisposition. During the attacks, which persist for several days or a week, the children present a wasted appearance and are unresponsive although conscious, their eyes are sunken and, as a result of considerable dehydration, their skin is slack. The respiration is forced and the expiratory air has an odor of acetone. The vomit at first contains remnants of food, but later, after the intake of food has become impossible, it consists chiefly of mucus and water with occasional traces of bile or blood. Occasionally the children complain of abdominal pains, and often there is constipation. The liver is usually slightly swollen and the urine contains considerable quantities of acetone bodies. After several days the vomiting ceases and the other symptoms disappear. A new attack appears after several weeks or months. In addition to these typical attacks of periodic acetonemic vomiting there are also less characteristic, rudimentary forms. These also recur periodically but they are not quite so severe. The author observed a number of cases of essential acetonemia, which differed from the described condition chiefly in that they lacked periodicity. He describes the clinical histories of several of these cases. No causal factor of the acetonemia could be found in any of these cases. The consciousness of the children became suddenly impaired. In some cases there was complete loss of consciousness and areflexia. Usually there was vomiting, with occasional attacks of convulsions. The respiration was forced, the expiratory air had an odor of acetone and the urine contained acetone. The severe symptoms disappeared, as a rule, quite rapidly, consciousness returning after a day and the other symptoms disappearing within a few days. In addition to the lack of periodicity, this disorder differs from that described in the first part of the paper in that the loss of consciousness is more pronounced than the vomiting. Although the pathogenesis of these essential acetonemias is not completely understood, they are favorably influenced by the administration of carbohydrates in the form of dextrose.

Wiener klinische Wochenschrift, Vienna

48: 983-1006 (Aug. 2) 1935. Partial Index

*Stenosis and Perforations of Large Bronchi and Their Significance for Pulmonary Disease. F. Fleischner.—p. 983.
Angina Pectoris Problem from Point of View of Angina Pectoris in Severe Anemias. O. Zimmermann.—p. 987.
*Compression Myelitis in Idiopathic Osteopsathyrosis. L. Deutsch.—p. 990.
Care of the New-Born. E. Nobel.—p. 995.

48: 1007-1030 (Aug. 9) 1935

*Suprasellar Tumors. A. Schüller.—p. 1007.
Most Suitable Treatment of Syphilis, Particularly Its Early Cure and Prevention. E. Hoffmann.—p. 1010.
*New Treatment of Sprains. H. Kraus.—p. 1014.
*Stenosis and Perforations of Large Bronchi and Their Significance for Pulmonary Disease. F. Fleischner.—p. 1016.
Anomalies in Position of Teeth. H. Pilcher.—p. 1019.

Changes in the Large Bronchi.—Fleischner discusses the significance of changes in the large bronchi for various pathologic conditions of the lung. He mentions bronchiectasis, the so-called congenital sac lung and honeycomb lung, hemoptyses of obscure etiology, temporary atelectasis, patients who eliminate tubercle bacilli and bronchial obstructions. On the basis of these observations he attempts to explain the pathogenesis of the early phthisic infiltrate and of the temporary infiltrations. He discusses a ventilatory disturbance that is likely to develop when there exists only a slight stenosis of the bronchus. He thinks that this disorder is quite often the cause of bronchiectasis and that many and perhaps the majority of the cystic or honeycomb lungs observed in adults are the terminal stages of saclike bronchiectases. It would be a mistake to speak of congenital deformities in conditions of this kind, and instead of applying the terms sac lung or honeycomb lung, which apply to congenital disorders, it would be better to use the term "polycystic disease of the lung." The author shows that hemoptyses originate occasionally in the large bronchi, either in benign tumors, granulation tumors, hyperplasias of the mucous membrane of the bronchi or changes near tuberculous or anthracotic lymph nodes. Reactions in the surroundings of such foci of the lymph nodes, which usually belong to the primary complex, in the form of infiltration of the bronchial wall and perforation with complete or partial expulsion of the focus, lead by way of a bronchostenosis to atelectases and to atelectatic pneumonias of the corresponding pulmonary lobes. There are also perforations without atelectases; they explain the elimination of tubercle bacilli in persons without demonstrable tuberculous changes in the lungs. Complete cicatricial closure of a bronchus produces atelectatic densification of the corresponding pulmonary lobe, while incomplete closure favors the development of suppurating processes beyond the stenosis. It may be assumed that from bronchial perforations of tuberculous foci of the lymph nodes there frequently derives the material that will form the initial foci of the bronchogenic phthisis. Many foci of the "exudative type," particularly many of the infiltrates along the edges of the lobes, are not really tuberculous foci, nor are they perifocal reactions but rather atelectatic engorgements.

Compression Myelitis in Idiopathic Osteopsathyrosis.—Deutsch describes the various conditions that favor the development of a compression or transverse myelitis, especially those in which a pathologic bone structure of the vertebral column exists. He discusses chiefly osteopsathyrosis, which often produces no subjective symptoms but may cause spontaneous fractures of the vertebrae. He gives a detailed description of the case history of a woman who, since early childhood, had repeated fractures, and this together with the blue scleras, the hardness of hearing and the calcium deficiency of the bones does not leave a doubt that osteopsathyrosis, or at least a quiet similar disorder, existed. The case is worthy of attention especially because of the myelitic manifestations, which were the result of compression. The true nature of the disease was not detected until a roentgen examination was made following the development of the nervous symptoms, which were produced by the spontaneous fracture of a vertebra. The author calls attention to the similarities and differences between osteogenesis imperfecta and osteopsathyrosis and reviews several other interesting cases of osteopsathyrosis that have been observed by other investigators.

Suprasellar Tumors.—In this summary discussion of the tumors of the suprasellar region, Schüller calls attention to the fact that in recent years the knowledge of the suprapituitary structures has greatly advanced but that there are still a number of unsolved problems, particularly as regards the tumors of the suprasellar region. He points out that the most frequent and also the most dangerous symptom of suprasellar tumors is a bilateral involvement of the optic nerve but that quite frequently this symptom is not correctly interpreted, which may be due to the fact that it is often the only symptom of the tumor. He describes the various forms of suprasellar tumors and their symptomatology, particularly hypophyseal tumors and the disorders caused by them. He discusses the differentiation of the suprasellar neoplasms from such conditions as epidemic encephalitis, multiple sclerosis, basal syphilitic meningitis, tabes with blindness, traumatic hemorrhages in the region of the chiasma and internal hydrocephalus of the third ventricle, and from remote symptoms of other endocranial tumors and the disorders of endocrine glands other than the hypophysis. In discussing the treatment of suprasellar tumors, the author points out that in some tumors operation is impossible. Then he mentions several of the surgical procedures and irradiation and

shows that certain disturbances caused by the impairment of the endocrine function of the hypophysis may be influenced by substitution therapy in the form of enteral or parenteral administration of endocrine preparations.

New Treatment of Sprains.—Kraus mentions the various therapeutic methods that are employed in sprains and shows that the best results are usually obtained in persons who have received no particular treatment but who had the energy to disregard the pain and at once begin with the active exercise of the joint. He points out that among actors it is customary to apply alcohol to a sprained joint and hold it over steam. This stops the pain and makes movement possible. The author followed this suggestion and found that the application of ethyl chloride produces anesthesia of the articular ligaments and that active movements during this anesthesia counteract the stiffness of the joint. He describes the procedure he usually follows. After the diagnosis and roentgenoscopy, he determines the painful point and applies ethyl chloride to it. Freedom from pain is soon established and is protracted by dropping a mixture of ether-alcohol-acetone (100 parts each) and camphor (20 parts) on the joint. Then the patient is urged to make active movements, chiefly in the direction of the greatest functional impairment, which of course has to be determined before anesthesia is induced. The treatment is continued for from ten to twenty minutes and is repeated several times. The patient is urged to apply at home three times daily the alcohol and steam treatment and to do further exercises. The author recommends the treatment for all new sprains that come under the physician's care in the first week or two following the accident and for old relapsing sprains. The treatment is contraindicated in cases in which the articular ligaments are severely torn, or when an intra-articular exudate is present. He warns against excessive freezing with ethyl chloride. Then he reports several cases in which he employed the treatment. He thinks that the method may eventually prove helpful in the after-treatment of fractures, as well as for diagnostic purposes and for painless reduction of incarcerated menisci.

Zentralblatt für Gynäkologie, Leipzig

59: 1873-1920 (Aug. 10) 1935. Partial Index

*Puerperal Mastitis. E. Puppel.—p. 1874.
Tubal Sterilization. H. Fuchs.—p. 1876.
Uterus Bicornis in Obstetrics. S. Zanela.—p. 1879.
Tubal Rupture Simulating Intra-Uterine Abortion. W. Briem.—p. 1891.

Puerperal Mastitis.—Puppel criticizes the treatment of mastitis by means of Bier's stasis and puncture incisions as unsatisfactory and stresses that, as in any other inflammatory process, the inflamed breast should be immobilized. He does not consider lactic stasis dangerous in mastitis, as some obstetricians do, because then mastitis should appear in abortions and in premature births. He thinks that external infection is the most frequent cause of mastitis, pointing out that rhagades are present in nearly all cases. The smallest fissure is sufficient to provide a port of entry for pathogenic organisms. For this reason it is advisable to take preventive measures as soon as fissures or rhagades appear. The breast should be immobilized and the child should not nurse, but the milk should be carefully pressed out. After twenty-four or forty-eight hours the fissures are healed sufficiently to let the child nurse again with the aid of a protector. Similar measures are resorted to if mastitis with high fever develops. The breast should be bound up, an ice bag applied and a vaccine preparation administered. The milk is pumped out only if the breast is overfilled. Nursing at the breast should not be resumed until fever has been absent for several days and after all signs of inflammation have disappeared. Since the author employed these measures, the mastitides that require surgical intervention have decreased greatly. That continuous nursing and puncture incisions are not advisable he observed in cases in which treatment was first given outside his clinic. He considers cessation of nursing also advisable for the sake of the infant, pointing out that the child may become infected. He cites a case in which continued nursing during mastitis resulted in a fatal septic pleuropneumonia of the nursling. The time at which incision should be done is largely determined by the type of the mastitis, whether a subareolar abscess, infiltration of a lobe, deep abscess formation or retromammary phlegmon. The author considers the latter condition most dangerous and requiring a wide opening. In these cases it is inadvisable to wait for fluctuation of the process or the positive outcome of an exploratory puncture. He thinks that in all cases in which it seems impossible to avoid abscess formation the incision should be made early so as to provide a discharge for the inflammatory products, because prolonged conservative treatment may lead to the destruction of large portions of the breast.

Hospitalstidende, Copenhagen

78: 781-792 (July 23) 1935

*Renal Injury in Traumatic Shock. E. Husfeldt and T. Bjering.—p. 781.

Renal Injury in Traumatic Shock.—Husfeldt and Bjering report two cases of marked traumatic shock following fracture of the pelvis and massive contusions in which blood transfusions resulted in improvement but death from uremia occurred one week after the accident. They could not determine whether the renal injury was due to local circulatory disturbances during the state of shock, leading to irreparable injury of the renal tissue, or whether a constant resorption of substances from the bruised tissue took place after the shock, exerting a direct toxic influence on the renal epithelium or maintaining a spasm in the blood vessels. They find the last-named assumption supported by (1) the remarkable emptiness of the glomerulus vessels on microscopic examination, (2) the surprisingly slight histologic changes in the kidneys, (3) the increased blood pressure noted as early as the day after the accident and (4) the results of function tests, showing that the disturbance did not appear until three days after the shock, which is incompatible with the idea of injury to the renal parenchyma during the state of shock itself.

Norsk Magasin for Lægevidenskapen, Oslo

96: 793-904 (Aug.) 1935

Medical School in Salerno and Surgery in Saga Age. I. Reichborn-Kjennerud.—p. 793.
Low Basal Metabolism: Casuistic Report. P. Hanssen.—p. 818.
*Hemoglobin Content of Blood and Number and Volume of Red Blood Corpuscles in Healthy Men and Women. L. L. Linneberg and H. Schartum-Hansen.—p. 832.
Resorption and Elimination of Iron Under Normal Conditions. R. Nicolaysen.—p. 842.

Hemoglobin Content of Blood.—Among fifty-one men, Linneberg and Schartum-Hansen found an average of 5.27 million red blood corpuscles per cubic millimeter and a hemoglobin content of 113 per cent, corresponding to 15.6 Gm. of hemoglobin per hundred cubic centimeters of blood, or an oxygen binding of 20.9 per cent. Averaging their results with those of Jervell and Warburg gives 5.395 million red blood corpuscles per cubic millimeter and 115 per cent of hemoglobin, corresponding to 15.9 Gm. of hemoglobin per hundred cubic centimeters of blood, or an oxygen binding of 21.3 per cent. Among sixty women the average was 4.49 million red blood corpuscles and 102 per cent of hemoglobin, corresponding to 14.06 Gm. of hemoglobin per hundred cubic centimeters of blood, and the hemoglobin content varied from 107.4 in the summer to 96.1 in the fall. Normal limits for men are set at between 99 and 135 per cent of hemoglobin and from 4.7 to 6.3 million red blood corpuscles, while for women values less than 90 per cent and more than 124 per cent of hemoglobin and less than 3.6 and more than 5 million red blood corpuscles are regarded as usually pathologic. The authors state that for both sexes the average hemoglobin content per erythrocyte is 30 or 31 micromicrograms, the content varying from 27 to 34 micromicrograms, and the average volume per erythrocyte is 85 or 86 cubic microns, the volume varying from 76 to 93 cubic microns. An anemia with more than 31 micromicrograms of hemoglobin per erythrocyte is hyperchromatic, one with less than 27 micromicrograms being hypochromatic. Color index and volume index are considered superfluous when such characteristic values as hemoglobin and volume per erythrocyte are available. The necessity is stressed of having a hemometer standardized by oxygen determination or other exact method so that the number of grams of hemoglobin per hundred cubic centimeters of blood that corresponds to 100 per cent on the hemometer is known.

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Relative Values of Carbohydrates Employed in Infant Feeding

Continued down from 1911

1916

"For the addition of sugar, I usually use dextri-maltose, which does not easily cause fermentation."—*L. L. Meininger: Use of Eiweissmilch, Arch. Pediat., 33:529-532, July, 1916.*

1916

In the treatment of marasmus, "Three per cent of malt sugar should be administered from the first, afterwards running up to as high a per cent as the child will take."—*L. T. Royster: A Handbook of Infant Feeding, C. V. Mosby Co., St. Louis, 1916, p. 100.*

1916

"Least irritating of all sugars, and more readily digested and quickly absorbed, is maltose."—*H. Lowenburg: A Practical Treatise on Infant Feeding and Allied Topics, F. A. Davis Co., Phila., 1916, p. 73.*

1916

"Dextrin-maltose is valuable in cases where intestinal disturbances are due to fermentation of milk sugar."

"Treatment (of sugar intoxication) consists in eliminating the latter (whey salts) as well as the sugars from the diet temporarily, and when the symptoms have subsided, a different sugar in proper proportion should be cautiously added; maltose and dextrin are preferable, because they are not apt to produce fermentation, while milk sugar is prone to set up fever and diarrhea."—*E. E. Graham: Diseases of Children, Lea & Febiger, Phila., 1916, pp. 179-201.*

1917

"For children who are not gaining on a normal formula with a sufficient amount of sugar of milk, or children who vomit when sugar of milk is fed, or who are constipated, the use of maltose instead of lactose often gives most satisfactory results. This is readily accomplished by substituting for the 4 or 5 per cent. of added sugar of milk an equal amount of dextri-maltose or malted milk, which latter gives, in addition to the maltose, some protein food and an insignificant amount of fat. In many cases children who have failed to gain on other food will immediately show a marked gain as soon as this change is made."—*R. G. Freeman: Elements of Pediatrics. Macmillan Co., New York, 1917, pp. 191 and 192.*

1917

"The carbohydrates most used in infant feeding are the three soluble sugars and starch. The three soluble sugars are lactose, or milk sugar, maltose, or malt sugar, and saccharose, or cane sugar. Maltose is not used in its pure form, on account of its cost. The various commercial preparations of maltose are combinations of maltose with various dextrins, but as in digestion dextrin is converted into maltose, the chemistry is practically the same."

"The sugar which is not absorbed is broken down by the bacteria of the intestine into a great variety of fermentation products, among them being lactic, butyric, acetic, and succinic acids."

"Another effect of the excessive fermentation which results from a relative excess of carbohydrate in the food, is the formation of an excessive amount of gas. This may cause abdominal distention, and, extending backward, it may carry irritating acid products into the stomach, and thus cause vomiting."

"Lactose is the sugar most likely to produce acute symptoms. The stools are practically always green and very irritating. Flatulence and colic are less prominent."

"The maltose-dextrin preparations rarely produce acute exacerbations."—*C. H. Dunn: The Hygienic and Medical Treatment of Children, Southworth Co., Troy, New York, 1917, pp. 423, 424, 425, 428.*

1918

"The sugars in the foods are milk sugar which is found in mother's milk as well as in cow's milk, cane sugar and malt sugar. Though milk sugar is a natural ingredient of milk it is not well borne by babies when added to their food; they digest cane sugar, the ordinary granulated sugar, much better; malt sugar is the easiest digested by babies."—*C. G. Leo-Wolf: Nursing in Diseases of Children, C. V. Mosby Co., St. Louis, 1918, p. 24.*

1918

"Maltose (malt sugar) has the advantage of being very easily digested; when part of the sugar given is maltose, many children gain more rapidly in weight than when only milk sugar or cane sugar is used."—*L. E. Holt: The Care and Feeding of Children, D. Appleton & Co., New York, 1918, p. 68.*

1919

"In the administration of protein milk with its large protein content, by adding to it sugar which is not easily fermented (dextri-maltose), we produce, instead of pathologic fermentation, a condition of putrefaction which changes the acidity of the intestinal contents to alkalinity, the peristalsis is decreased, the intestinal contents pass slowly through the large intestines with absorption of fluid and excretion of calcium and magnesium salts. These minerals unite with fatty acids to form the typical fat-soap-clay-coloured constipated stools characteristic of protein milk feeding, and it is at this point that dextri-maltose should be added to the food."

"The majority of the cases were kept on protein milk for a period varying from three to four weeks, and, in many instances, contrary to the usual opinion, we were able to keep the children on protein milk plus starch and dextri-maltose, sufficient for their caloric needs for a period of several months, in each instance accompanied by a substantial gain in weight and normal increase in vigor and tissue turgor with comparative freedom from digestive symptoms."—*A. Brown and I. F. MacLachlan: Protein milk powder, Canad. M. A. J., 9:528-537, June, 1919.*

1920

"There are three sugars commonly employed in infant feeding: (1) malt sugar or dextri-maltose, (2) cane sugar, and (3) milk sugar. Malt sugar is the most easily digested and assimilated, cane sugar next and sugar of milk the least so."—*L. O. Frech: The caloric method of artificial feeding in normal babies, Illinois M. J. 38:484-488, Dec. 1920.*

1920

Regarding treatment in disturbed metabolic balance in infants, "The one carbohydrate which seems to give the most satisfactory results in these cases is malt sugar."—*C. H. Seybert: Disturbed metabolic balance in infancy, Hahneman, Monthly, pp. 379-382, June, 1920.*

1921

"Next to woman's milk is cow's milk in simple modification with water and sugar in proper proportions and amount according to the age of the child. Milk Sugar is the most expensive and least satisfactory sugar. Dextri-Maltose is the best sugar."—*A. A. Shawkey: Infant foods and infant feeding, West Virginia M. J. 16:284-287, Feb. 1921.*

1921

With reference to hypotrophy, "In mild cases, the addition of dextrimaltose instead of cane or milk sugar may be sufficient to obtain a gain in weight."—*C. Herrman: The treatment of nutritional disorders in artificially fed infants, New York M. J. 114-158-160, Aug. 1921.*

1921

"Maltose and dextrin compounds are acceptable to the infant's digestion in relatively larger quantities. They are not as sweet as cane sugar. They are of practical value when larger amounts of cane sugar are not well borne.

"The so-called 'Mead's Dextri maltose with Potassium Bicarbonate' is laxative, and in the presence of a stationary weight may be given in larger amounts."—*F. W. Fergusson: A meihod for the modification of cow's milk, Journal-Lancet, 41:628-629, Dec. 1, 1921.*

1921

For cases of fermentative diarrhea, ". . . the ideal plan of treatment would be to give a food which is low in sugar (the food which that group of organisms thrive on) and high in protein. Calcium caseinate milk accomplishes this purpose. In our series of cases, we found it was necessary to use the casein calcium for from 5-8 days; we then stopped it and added dextri-maltose to the formula."—*A. G. DeSanctis and L. V. Paider: The value of calcium caseinate milk in fermentative diarrhea, Arch. Pediat. 38:233-236, April, 1921.*

1922

In the treatment of diarrhea, "The sugar is added gradually as conditions admit, some sugar other than milk sugar or cane sugar being used, preferably dextrin and maltose."—*H. E. Small: Diarrhoea in bottle-fed infants, J. Maine M. A. 12:154-158, Jan. 1922.*

1922

"The use of other soluble carbohydrates other than lactose for milk modifications are very good. Some believe the addition of dextrose or dextri-maltose makes the casein curd softer and easier to digest. This is questioned, but all agree that in cases of malnutrition, where the patient is intolerant to lactose and cannot get the benefit needed from the fat in the diet that the dextri-maltose is invaluable as it is the easiest sugar to digest, and can be immediately used for energy production without undergoing further change."—*E. G. Padfield: Remarks on infant feeding, J. Kansas M. S. 22:97-101, April, 1922.*

Continued down to 1934

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